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Address.

PREPAREDNESS FOR HEALTH.*

By HAVEN EMERSON, M.D., NEW YORK,
Commissioner of Health.

YOUR yearly meeting to pay a debt of gratitude to those who made possible a gentler art of diagnosis, a quicker and safer skill in treatment and cure, has brought forth such tributes that I may safely leave the honors earned as they appear upon the record.

How suitable is our place of assembly, this generous and spacious building, the centre from which the guiding hand will direct the hospital family, the storehouse of priceless inventories of physicians' labors, the custodian of still unexplored treasures certain to bring forth gifts at the open sesame of the diligent student, broad in scope and with a view to future usefulness far beyond the imagination of the founders of this great educational institution.

To mobilize the knowledge and service of today is a privilege no less than to advance bit by bit the borderline of facts. And here we see provision for the one, and opportunity for the other. To my mind the best hospital is the one which succeeds in keeping the largest number of people out. To prevent the little disorder of today from becoming the serious operative risk of tomorrow, is an ideal to which that

* Ether Day Address. Delivered upon the occasion of the opening of the Moseley Building at the Massachusetts General Hospital, October 16, 1916.

greatest of all parts of a hospital, the clinic or dispensary, is devoted. But why wait until the patient comes to complain? Why not entice them to come to libraries, lectures, friendly personal visits, such intimate consultations for advice as have made the name of family physician, village minister, and parish priest beloved the world over?

Many of the big troubles the patients bring to your doors have their little beginnings in carelessness, misinformation, lazy habits, weak character and self-indulgence; and when you have set them on their feet and returned them home with a God-speed, you are not rid of them unless you have taught them while you have treated them.

The hospital of the future—and surely none by its past has so well earned the right to be among the greatest in the land for all time as this one—will have on its records and to its credit a file of histories marked *Case not admitted: sickness prevented by education.*

"To be used; that is the sublimest thing we know." So the gentle David Grayson inadvertently described the wish and hope of the servants of the common good who enjoy their work for the work's sake.

It is by coöperation and not merely by competition; by the persuasion of helpful ideas and not with destruction of things or people; it is in being for a principle and not by being against persons that the spirit of preparation and patriotism is developed in a community.

Preparedness; to make ready beforehand, to make ready for some particular purpose or service, to put things in suitable order, to be in a

state of readiness, to adjust, to adapt,—this is the plan of the prudent citizen. Disagreement upon this is impossible, at least to the accidental.

For what, then, shall we be in readiness? To what shall we adjust ourselves? What shall be the nature of our preparations?

The answers will be as various as the ambitions of each one of you. In this great household of relief, this home of the helping hand, the privilege may be allowed me to take it for granted that at the moment you think of and feel with one accord the overwhelming call to make this country not only a place for freedom in religious observance and freedom of speech, but a land free from the burden of preventable disease.

"Preventable" is a word to conjure with, for no sooner is the true cause of sickness announced than the possibilities of prevention come knocking at the door. So we see the whole array of philosophy and science assailing the mountains of ignorance and returning from time to time with new trophies, called by the physicians the etiological factors, the specific or determining causes of disease. It is upon no short and easy path we are set out. The goal will continue to recede, the list of preventable diseases continue to grow, and by so much will our duty be enlarged.

If we can believe the somewhat dim records of early civilization, infectious and epidemic diseases were recognized then, and to meet them, racial and religious habits developed. Later, when mankind created an artificial environment and began to try his hand at wresting pleasures and comforts from resistant nature, there came upon him misfortunes created by his own personal habits. Again we find restraint and advice supplied by governments of church or state.

When man thereafter began to exploit not only nature but his fellow man, there sprang a host of new and insidious diseases which have made such inroads upon community and national existence in all lands that a voluminous body of civil law has been created in an effort to correct the health hazards of industry. With fair accuracy, then, we may divide the problem of health protection into:

1. The prevention of communicable diseases.
2. The correction of habits which determine or contribute to premature death.
3. The prevention of industrial hazards.

Under one of these three headings we can properly place most of the activities of the present-day campaign for health as a personal or a community problem. But bear with me a moment while I call to mind a preliminary which should be observed before attempting any new experiment. For a control and to establish a measure of results, we must know how many are there of us, how many are the annual recruits in the nurseries, and what the

afflictions are that draft so many to the army of the silent.

As the bookkeeper and accountant are the recorder and analyst of business transactions, so the registrars of births and deaths provide the means of assessing the results of public health administration.

What community is so dull as to be uninterested in its continued existence? Self-interest drives the sick patient to seek relief from pain and disability by appeal to his family physician. Shall not the village, city or state require at least an equivalent service of diagnosis, prevention and treatment for its various disturbances of community function, the destruction of its several members?

The merchant accepts our past experience as a guide to the need of future supplies; the salesman counts on publicity and education to create a demand for his wares. Shall our cities or our nation ignore their greatest asset, and fail to count the daily loss of lives as inexcusable? And yet—to our shame be it said—we, who claim to be a civilized nation, have still so cheap a notion as to life and death that we are without a national registration law or uniform state laws demanding the reporting of births and deaths.

In the councils of the world there is no record of the accomplishments of the United States as a whole in the field of preventive medicine and sanitation. True, honor is given to the great men of science produced here, but neither the birth rate nor the death rate of all the states is known. Are we so young, so satisfied with local accomplishments and excellences, that we can remain indifferent to the insufficiency of the very elements upon which constructive social statesmanship must be founded? Only 66% of the population of the United States lives in states where the registration of deaths is compulsory, and less than 31% live where registration of births is required. Only two-fifths of the area of the United States are included in the registration area for deaths, and but 10% of the land area of the United States is included in the registration area for births. Failing the national figures, which should have been available for the past hundred years, I may be excused if I use the records of New York City, which has just completed a half century of experience with a department of public health.

The yearly death rate has fallen from 29 per thousand to 14 per thousand of population.

Deaths from cholera, smallpox, yellow fever, typhus fever and malaria have all but disappeared from our records. In the first ten years there were 6260 deaths from smallpox. In the past ten years there were 7.

Deaths from tuberculosis, typhoid fever, puerperal fever, infantile diarrhea, diphtheria, and scarlet fever have shown a reduction of from 50% to 90% in this half century.

Since the incorporation of the greater city in

1898, the yearly death rate has been reduced 31%.

But best of all is the brilliant result of the scientific attack upon the infant mortality rate, which has fallen from 242 per 1000 living births in 1891 to 98 per 1000 births in 1915, and in the past five years from 170 to 98 per 1000 births. Whereas only 80% of the babies born in 1898 lived through their first year, now more than 90% survive. When this saving of lives was begun, there were those whose lack of confidence and information did not carry the conviction that this baby saving was an ultimate benefit to the community. Thanks to the data now available, we can answer with courage and certainty that the saving continues right up to the school age, and that the babies saved are the worth-while lives. The deaths were not inevitable and merely postponed a few months or a year or two. If the death rate of 1866 had prevailed in 1915, we should have lost in New York City last year 88,000 people who are now living.

The details of the methods by which these results were obtained in New York City, as in other cities and states here and abroad, need not concern us. This is not a year to dwell upon past victories, but to take thought lest in the onrush of events we find ourselves complacently satisfied with our successes, while our neighbors and, in terms of national existence, our competitors, may soon be striding past and beyond.

Remember that while there are the thousands killed in Europe in battle, more people are killed by preventable disease annually in this country than the annual loss of any nation in the present war.

Let us rather face the record and plan for our own more creditable future. To pick out three typical failures, we may properly consider why we still lose our thousands from tuberculosis, alcoholism, and among industrial workers.

Out of 75,000 deaths a year, we lost 31,700 from causes which are largely, if not wholly, preventable. Last year, in New York City, with a total population of 5,602,841 and a total death list of 76,193, there were 10,249 deaths from tuberculosis, and 1597 deaths admitted to be due directly to alcohol, and, as all pathologists and physicians in general hospitals or private practice know, the recorded deaths from alcohol represent but a fraction of the deaths really attributable to this drug, if not as the sole factor, as a contributory or determining cause.

There were 2596 deaths from diphtheria, scarlet fever, measles and whooping cough, and may I in parenthesis ask you to note that this is our annually recurring number, and is larger by more than a hundred than the total deaths from poliomyelitis in our recent epidemic.

Preventable accidental deaths numbered 3509, exclusive of deaths from violence and homicide and suicide.

We still lose 13,866 children under a year of age.

If we count at least 10 cases of sickness or temporary disability for each of the deaths above listed, we reach a total of 317,000. Evidently there is sufficient work ahead to keep us upon the tiptoe of endeavor.

In tuberculosis the first defect in control comes when the physician fails to make an early diagnosis. This failure must be shared equally by the patient and the private practitioner. One hardly ever sees an early case of pulmonary tuberculosis in our colored population. They are childlike in their optimism, and they neglect even the simplest precautions. They fail to obtain medical advice of any kind until seriously disabled. They must be taught to seek advice earlier,—a need worthy of a great leader.

When the state sanatorium for incipient tuberculosis was first opened at Raybrook, N. Y., early cases were sent only by a few physicians in some of the large cities, and this state of affairs persists to a serious degree at the present time, so that it is apparent that patients must call the physician earlier and the standards of diagnosis must be raised before we can make maximum use of our present knowledge as to the arrest of the disease. Perhaps the solution will come through a habit of annual or semi-annual medical examination of everyone, and such a habit would justify the time, attention, and small cost involved, if for no other reason than that many a case of tuberculosis would thus be noted and be promptly put in the curable class.

Twenty physicians of the Health Department examined 20,357 food handlers last year and found 1 in 1000 suffering from pulmonary tuberculosis. When 1116 private practitioners, for pay, examined 26,300 in the same industrial group, they found 1 among 3700 tuberculous.

There was a similar and equally serious discrepancy in the incidence of venereal diseases, as reported by the two groups of physicians. The Department of Health physicians discovered, among the 20,357 food handlers examined, 111 syphilitics and 22 cases of gonorrhea. The private physicians discovered, among the 26,300 food handlers examined, 7 syphilitics and 5 cases of gonorrhea. Of the 5 cases of gonorrhea, all but one were reported by the examining physician of a large railroad corporation.

There is much food for thought in these results. The clinical material under observation was as nearly uniform in the two groups as can well be imagined. The examining physicians of both groups were, in the main, graduates of the medical schools of New York City.

In the case of the private practitioner there was the opportunity of a new and considerable source of income, and remuneration in fair proportion for the time consumed, and there was the same responsibility to detect disease as is assumed when a patient calls at a physician's office frankly complaining of sickness. The food

handlers considered themselves healthy when applying for examination.

The Department physicians, drawn from the same professional ranks, working on a salary, were responsible for a methodical performance of a set task under the supervision of trained diagnosticians, and they discovered proportionately 3.7 times as many cases of pulmonary tuberculosis as the private physicians. And to make it quite clear to you that the Department physicians, working at the occupational disease clinic and not trained as specialists in tuberculosis, were well within the mark, I must remind you that there are a little over seven cases per 1000 of the population in the city at large.

The query is inevitable; are private practitioners in the by and large, ready to detect disease in people who assert that they are healthy? Is the public sufficiently protected at present, if the symptoms of disease must be declared by the patient before it is named and treated by the physician?

As patients come to the tuberculosis dispensaries in New York City, the story is too often told, that the family physician has been treating for weak lungs for some time, but has never examined the bared chest or made a microscopic examination of the stained sputum. Unless such stories become a thing of the past, the community will revolt against medical services upon a personal basis. Such medical service is disgraceful and should not be tolerated. Excusable, perhaps, before 1882, when Koch proved the tubercle bacillus to be the cause of the disease, or before 1819, when Laennec demonstrated tubercular disease of the lungs by physical examination of patients; but generations of physicians have been taught since then, and still there are physicians who practise tongue and pulse medicine blissfully oblivious that diagnosis is capable of treatment as an exact science.

With our present knowledge, secondary cases of tuberculosis in a family are a needless waste of life. We know the cause, and enough of the mode of transmission to prevent infection, but it is easier to treat from an office chair by pen and pill, than to become the actual teacher and family instructor in the home, weeks and months on end, so that the facts known are used by the people exposed.

Are we forever to await the call of the sick patient before giving service? Must we sit by and see that for every 1000 children living in certain blocks of every city, so many will become infected with a preventable disease, as to which we know the specific cause and the means of transmission?

If New South Wales has found it possible to have every person examined by competent physicians, every infected person isolated or so controlled at home as to break the endless chain of transmission, and thus to bring pulmonary tuberculosis to an end in that commonwealth

and prevent the entrance of infected people in the future, is there not a service worthy of an effort here? Is it good government, or utter social neglect to permit incompetent physicians to continue to practise years after they have ceased to learn, or have become incapable of applying the facts upon which prevention of disease must rest? Is not the public interested?

Shall we continue to permit the construction and occupancy of buildings in every city in the country, and in many of our rural regions, unfit for human needs and certain to lend themselves to the development and perpetuation of sickness?

And with syphilis it is no different. Eight per cent. of push-cart peddlers have been found to be syphilitic; 25% of the children and adults admitted to a great orthopedic hospital show positive Wassermann reactions.

Here, again, we are confronted with the dual failure. The spreader of the disease fails to obtain diagnosis and treatment that will put an end to his particular infection, and the physician fails to report the disease and to insist upon such personal habits and persistence of treatment as will alone prevent danger to others. Have we the courage to adopt an honest and rational program such as has recently been established by law in Western Australia, and has been in force in Denmark for the past ten years? This law holds the patient and the physician equally responsible,—the patient to obtain immediate treatment and persistent care until cured, the physician to report the case, teach, caution, and treat the patient, if necessary at public expense, and under restraint, until the possibility of transmission is at an end.

Why allow competition to determine the distribution of medical services? Why is there one physician to three hundred and fifty-six persons in Hampstead, and one physician to five thousand five hundred and eighty-two in Shore-ditch in London? Why is the proportion in New York City, one to five hundred and eighty-nine in Manhattan and The Bronx, and one to fourteen hundred in Queens? After a man or woman has been taught through the endowments of elementary schools, colleges, medical schools and hospitals, and has arrived at the age of from 25 to 30, so far unproductive, are we to consider that the community owes them a living or that they owe the community a life?

Is competition for money to determine the future progress of the graduated physician, or is he to be a public servant drilled and trained to play a most responsible part in our modern economic and social structure? Is the public need to determine their training, their location, and their income, or will these all be determined by the question of largest financial return? Physicians have committed themselves to a process of voluntary self-elimination, and society will not easily accept them now or in the future on the basis of individual competition for money,

which determines the number and distribution and capacity of other professional groups.

Shall the physician continue to be at the beck and call of the lady with a severe case of lack of occupation, and must he kowtow to the business magnate whose disease-breeding tenements are largely responsible for the consumption rate?

Shall the hospital be filled by those who want to go and can afford the price, or by those now waiting outside, whom the dispensary physician knows must lead a handicapped existence for lack of the very luxury of rest in bed, from excess of which my lady-do-nothing suffers? The wrong people are generally in hospitals. The selection is made more by means than by needs.

Shall the hospital retain the seclusion of its walled privacy and await the coming of the lame and fevered, or shall it become a high school for health, with extension lectures, a reference library on personal hygiene, a centre for organized consultation, a seat of preventive medicine?

We lose each year in New York as many lives from alcoholism as the devastating epidemic of infectious colds cost the City of New York last winter, as many as all the deaths from the epidemic of poliomyelitis, which has raised the whole Eastern coast of this country to a point of panic. And what is to be done, and what has been done to prevent these regiments and more from marching this year, as last, out of New York City to the graveyards? Education coupled with enthusiasm must not be mistaken for fanaticism. Legislation has never changed habits, but may follow a change in popular convictions.

To convince the people of this country that the use of alcohol internally is to their disadvantage would seem a simple matter to anyone with an elementary understanding of physiology, and the action of the anesthetic group of drugs.

What nurse or doctor who has had a hospital service, but has seen enough to make each one a permanent crusader for a non-alcoholized society? And yet we find physicians permitting the use, condoning its use, yes, prescribing alcohol with a freedom which cannot but make them pause and consider when the stories of the habits come to their ears. So strong is the inertia of habits, so vast the momentum of large industries, that it will take years of teaching to wean our people from this, their worst dietary enemy. Must we wait for a national calamity to shock us into appreciation of the extravagance of our wasted lives? I think it is fair to say that no single thing would make so immediate a change in the whole list of causes of death in adults as the abandonment of the use of alcoholic beverages. Every group of preventable diseases in adults would show a diminution in incidence and in death rate. And

among children, too, it predisposes to various ills and weakens resistance to infections.

The education of public opinion and private habits is at present the only reasonable and promising measure at the service of the public health officer and the private practitioner in the effort to have the general use of alcoholic beverages, and the largest single cause of poverty and sickness, abandoned. Other habits also, as to housing, eating, personal cleanliness, recreation, etc., are certain to be modified by education, and in no other way.

As for the third class of general conditions in which we now fail to protect and prevent, the most recent and, in many ways, the most interesting as a public health problem, I shall ask you to note the widespread interest in tariff protection for the new chemical industry so extensively developed here from force of circumstances abroad. The halls of Congress were vigorously assailed in the interest of those who saw our opportunity, with governmental support, for the creation of a great and lucrative commerce at home and abroad. Protection is what they clamored for; protection of the chemical products against the keen and undoubtedly effective competition certain to develop when the bans are again removed from international trade.

More attention has been paid to the protection of industrial workers in Germany than anywhere else in the world, and the most recent report indicates that in the large chemical works in Germany, with the improved sanitary conditions, the sick rate is 54.9% of all employees per annum, with an average duration of sickness in each case of 17.8 days.

Among 185,820 employees in the chemical industry in Germany, in 1905, there were 163,522 cases of sickness, or 88% of all employees, with an average duration in each case of sickness of eight days.

Let the public take an active interest with the employer and the employee to see that the workman, who produces, is protected in this country; for it is obvious to the student of causes of death that the protective tariff upon a product may prove too high a price to pay for the doubtful security of carrying on with profit, trades which throw back into the community so many disabled workmen.

Are not the lessons of the day clear enough for us to see that the population of the wards of the hospital are the measure of our inefficiency?

How many admissions to the wards are sufferers from preventable defects? Strike off your hospital census those who have tuberculosis, or syphilitic lesions, and where is your overcrowded ward?

Count off the patients disabled from neglect of hazards of occupation, count those who pay their final reckoning for the life-long use of al-

cohol, and you see a dwindling line of beds and a short service in the operating room.

What the autopsy table is to the visiting physician and the surgeon, the hospital ward is to the health officer. There he is faced with his failures.

And why, you ask me, did I take the trouble to expose the failures or shortcomings of our present system, or lack of it, in view of the record of accomplishment of the past fifty years? Briefly, because the promise of the future cannot be fulfilled unless and until all physicians coöperate for the public good, as well as competing for private livelihood, and unless we make available for all, services in diagnosis, prevention and treatment of disease of the quality which now is doled out at a price for the few, given freely to the very poor, but unobtainable for people of moderate means.

One competent physician, in touch with and capable of using the resources of special diagnostic laboratories, and free to call consultants to his aid, will replace ten bunglers who at present survive only because the ignorance of their patients is denser than their own: will save more lives, abbreviate sicknesses, and at a cost far less than the tax for inefficiency now paid by the uninformed public.

Whether by organization, by endowment, or by state employment, it seems to me that there must come a change in the basis of medical practice.

Preparedness for health in any state or community requires for the prevention of communicable disease, accuracy in early diagnosis by the family practitioner, and such means and knowledge as to care and treatment as will shorten the period of communicability to the minimum, and limit the contact between the sick person and the rest of the community to those who are insusceptible or to places where the conditions of residence and supervision will prevent exposure.

Segregation of the infected individual in hospitals and sanatoria should become so universal for all communicable diseases that general hospitals and private establishments would serve the purpose now met chiefly at state and municipal expense. The pest house is the mediaeval conception which still clings about the idea of an isolation building. There should be a cheerful welcome and adequate provision for communicable diseases in every general hospital, with a medical and nursing service, capable of a technic equivalent to that of aseptic surgery, which can meet the modern needs of sanitary science and bring results in treatment and cure as brilliant and creditable to physicians as have been contributed by the surgeons. The public would be better protected, the treatment of infectious diseases would be improved, doctors and nurses would learn much which now they miss in a general service.

To alter habits which we know diminish resistance to disease, and limit the capacity for

intelligent endeavor and put a serious burden upon the community because of dependency in later life, we must teach the children of the schools, the parents in the homes, the men and women in the shops and factories, the patients and dependents in our dispensaries and hospitals, such simple truths as will encourage them to require and maintain clean, light, and airy living rooms, to avoid entirely the use of alcohol and patent medicines, to proportion their food to their needs, and to consider physical fitness not only a priceless inheritance, but its maintenance a national duty.

Before the inevitable victory over industrial disabilities can be complete, or the abatement of conditions which cause an annual loss from avoidable illness equal to the national debt, is accomplished, it must be borne in upon the minds of those who employ their fellow men that of more value than the product is the producer. The employers, the public and the employees are jointly responsible for conditions causing sickness among wage-earners and their families. The employer's legal responsibility is generally limited to the places of employment and working conditions. The public is responsible for community conditions common to all classes of citizens. The greater share of the burden as to cost and remedy lies upon the workman himself, but as he is unable to meet this responsibility single handed, it rests with the public and the employer to share with him the cost, and to determine the character of the service needed.

Thirty-five per cent. of the wage-earners of this continent must ask for public or private charity when disabled by disease. Shall it be said that we are so selfish, so short-sighted, so wasteful, that we prefer to pay a bill for damages, when health and time and economy are all to be had by paying for prevention?

The burden of giving free treatment to the victims of industrial hazards can no longer be carried by the medical profession. When the state, the employer, and the employee contribute to defray the cost of medical services for the prevention and relief of occupational disease, it will be reasonable to expect the medical profession to submit to a degree of periodic re-examination and continued compulsory training which, up to the present time, has existed only in the medical branches of our federal services. In the medical services of our federal government, re-examination is required periodically even to remain in grade, and advancement is only on examination. Attendance at post-graduate medical course periodically is compulsory.

In the Department of Health of the City of New York, advancement from grade to grade in the medical positions cannot take place without competitive examinations. Failure to earn average rating for efficiency for three successive quarter years of service results in the bringing of charges of incompetency against a physician.

Why allow all the glory to go to those who have reduced the death rates in the occupation least productive of national progress, the occupation of arms?

Between 1880 and 1916 the death rate among the native troops in India was reduced from 41 to 3.7 per thousand, and for British troops in India from 24.8 to 4.3; and similar results are within our reach in the vastly larger army of industry.

Of what avail to keep the policeman in perfect health if the families he protects from violence and theft are allowed to suffer from loss equally discreditable to representative government?

Scientific coöperative medical service promptly summoned and consistently obeyed; education in the ways of right living, from the training of the expectant mother, through the schooling of her child, and until the new home is started in the next generation; union of effort by the state, the employer, and the employee, to prevent wastage from occupational disease. Upon these principles of action must our social program for national service be built.

It is not a conflict with the popular clamor for a military and naval preparedness that I suggest, not a hindrance to commercial preparedness for greater national wealth, but a warning of the futility of both of these without the assurance that the first need and greatest asset of a nation, its health, should take the leading place in your thoughts.

In closing, may I quote from that sensitive student, that sharp analyst of society in the last century, Thomas Carlyle: "Men cannot live isolated. We are all bound together for mutual good or mutual misery as living nerves in the same body. No highest man can disunite himself from the lowest."

There is nothing so democratic as disease, no bond so strong as the appeal of suffering fellow men.

I beg of you to consider the merits of the philosophy of prevention of disease, a worthy development of modern medicine, and I ask you to devote at least part of your lives to the encouragement of preparedness for health.

MASSACHUSETTS SOCIETY FOR MENTAL HYGIENE.—The annual conference of the Massachusetts Society for Mental Hygiene will be held at Ford Hall, Boston, on December 13, 14 and 15. Among the speakers at the opening session will be Dr. Walter E. Fernald of Waverley, Dr. E. E. Southard of the Psychopathic Hospital, Judge W. T. Forbes of Worcester and Dr. F. E. Williams, chairman of the advisory prison board. Prof. W. H. Burnham of Clark University will preside and Lt.-Gov. Calvin Coolidge will be a vice-chairman. It is expected that proceedings of this meeting will be published in subsequent issues of the JOURNAL.

Boston Psychopathic Hospital.

THIRD ANNUAL CONFERENCE ON MEDICAL AND SOCIAL WORK, JUNE 18, 1915.

SPINAL FLUID SUGAR.*

By J. B. RIEGER, S.M., AND H. C. SOLOMON, M.D.,
PSYCHOPATHIC HOSPITAL, BOSTON.

ESTIMATIONS of the reducing sugar content of the spinal fluids of 124 male, and 51 female subjects, in the main, psychopathic, gave values ranging from 0.050-0.090, or a grand average of 0.070%. The extremes, obtained in certain diabetic and inflammatory conditions are not here included. In general, the higher values have always been found in the more robust subjects, and aside from this, the range is the same in the psychopath as in the non-psychopath, in the male as in the female, and in the young as in the old.

The diagnoses made on these subjects are: general paresis, 47; dementia precox, 30; alcoholism, 22; manic-depressive insanity, 12; epilepsy, 6; diabetes, 6; juvenile cerebrospinal syphilis, 4; adult cerebrospinal syphilis, 5; arteriosclerosis, 4; pellagra, 2; tubercular meningitis, 1; hypopituitarism, 1; chorea, 2; tabes, 4; miscellaneous psychoses, 20; not insane, 10. On this basis the following values are remarkable: diabetes, 0.134-256%; pellagra, 0.90-0.102%; two of the more severe cases of cerebrospinal syphilis, 0.044-0.048%; tubercular meningitis, 0.026%.

Mestrezat¹ similarly reported low sugar values in the spinal fluids of individuals in whom there existed acute inflammatory processes of the meninges, and this circumstance he explained by assuming that the sugar in such cases is the substrate of the bacterial metabolism. That the values are uniformly high in general paresis, as reported by the same observer, could not be corroborated. Likewise, the figures 0.126-0.212%, obtained by Mott² in eight miscellaneous psychopathic cases, mostly dementia precox, in all probability can be ascribed to faulty technic.

The Bang micro-reduction method was at first employed, but owing to the wide fluctuations in the results obtained, it was abandoned for the Lewis-Benedict method, which proved more accurate in the hands of the authors. The fluids were obtained by lumbar puncture of the living subject.

* Being Contributions of the Massachusetts Commission on Mental Diseases, Whole No. 156 (1916.14). The previous contribution (1916.13, 155) was by H. M. Adler entitled "A Psychiatric Contribution to the Study of Delinquency," to appear in *Journal of Criminal Law and Criminology*.

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- ¹ La Liquide, Cephalo-Rachidien, 1912.
- ² Lancet, 1910, ii.

AN OUTLINE OF THE ELEMENTS AND TREATMENT OF STAMMERING.*

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It is hardly necessary nowadays to state the general cause of stammering. With the exception of cases of structural defect, stammering is of purely mental origin. Defined, it is the expression in faulty speech of the neurotic temperament. Whether acquired or inherited, it is always there. There are no phlegmatic stammerers.

Therapy, therefore, must be based on this fact. It is the theory of some (Apelt among them) that a cure can be effected only by working from the inside out, that is, by giving all the attention to the frame of mind when speaking. Another method, practised by many teachers who are not physicians, disregards the mental element almost entirely; calls stammering a habit and approaches it through vocal exercises only—from the outside in.

It is true that stammering is largely a habit, and that cases have been found where it still persisted, even after the nervous condition had been eased, simply because the method of speaking, practised through a lifetime, had become mechanical. Also, in the case of children, the growing discouragement and accumulating fears can often be cut short by curing the habit alone.

But neither of these instances is drawn from the majority of cases by any means. Few can be so easily dismissed. The man with an obsession for zigzagging down the street in order to touch every lamppost, does not need lessons in walking through a meadow. He knows as much about walking as his instructor. Just so, the stammerer can produce perfectly normal consonants and vowels when *unembarrassed*. Practical treatment of the habit, vocal exercises, etc., are only half the battle. The treatment must go deeper, until it reaches the fear—the emotional disturbance that occurs under trying circumstances between the thought and its expression.

It is here that the training of a neurologist is required. Comparatively few specialists in speech defect are physicians, while the lay

teachers and so-called professors are legion. And yet stammering is as truly the province of the neurologist as any other nervous affection.

When, therefore, a layman undertakes to treat stammering, the field narrows for him. To reach the mental side of his case, he has to rely solely on the personal touch. He must be the patient's friend. The ideal plan is to go to the patient's home, walk with him; if a child, play with him; and if the patient is in school, interest the teacher of his grade in him. The recitation in school is nearly always the hardest thing a child has to contend with, and unless it is plainly too much for him he has to put up with it for the sake of his standing. But it is the duty of the speech instructor to see just how much strain a child can bear, and, whenever necessary, to get him excused from reciting until, with the treatment he is receiving, the ordeal shall have become less dreadful. Often, to tell a child who is constantly bracing himself for difficulties, that he need not do the things he dreads, is followed by surprise, gradual relaxation and a new perspective, which is a great help to normal speech. In the same way, other obstacles in the daily life of the patient can be surmounted.

In a public clinic this ideal plan is less feasible, and other means have to be found. In order to link the teacher's office (where, after the first, the patient finds himself very much at home) with the outside world, that is full of difficulties for him, the speech class is the next best thing.

Class treatment alone is usually most shallow. In every case it should accompany individual attention. But individual treatment, pure and simple, is apt to be too encouraging. Everything is not overcome, by any means, after the patient has learned to speak perfectly when alone with the teacher, whereas his speech in class is a pretty good indication of his progress at home.

In the speech class there is also the benefit to a reserved, rather lonely patient of contact with others, some of whom are more afflicted than he is himself. He discovers that his difficulties are shared; that, after all, it is possible to treat quite naturally the defect about which he had kept tensely silent all his life.

Then there is the opportunity in a class of this kind of reproducing every-day situations. It is not like a class in school. It is more informal and flexible. Everything is encouraged that tends to put the patient in a normal setting. The routine speech exercises of the teacher's office are here put into practice through storytelling, debate, and games that require conversation. No one joins the class until he is quite willing, and the most shy soon grow to like it.

It is, of course, more difficult to converse naturally in company on interesting subjects than to read or recite before one person, and patients whom the teacher has considered greatly improved frequently do less well when put into

*Being Contributions of the Massachusetts Commission on Mental Diseases, Whole No. 157 (1916.15). The previous contribution (1916.14, 156) was by J. B. Rieger and H. C. Solomon, entitled "Spinal Fluid Sugar," BOSTON MEDICAL AND SURGICAL JOURNAL, December 7, 1916.

the class. There are also degrees of difficulty in class work. Making a prepared speech or joining in a formal debate is usually the hardest thing for every one. In some cases patients who had been speaking perfectly for months, when called upon to stand up and debate, lost complete control. Such occurrences, instead of being discouraging, are the teacher's opportunity. They show the weak spot in the patient's progress, and improvement from then on, though frequently hard won, is no longer superficial.

As to the elemental speech exercises, on which all such work is based, the methods used are various. They include many principles of singing, elocution, and phonetics, the most practical of which aim to correct a monotone by means of inflexion; rapid, nervous speech, by exercises in slowness; faulty breathing and misuse of speech muscles by training in breath control, relaxation, etc.

Unfortunately, these exercises have all to be overseen by the instructor. A patient cannot work upon them profitably at home. There is little result even when rules are followed quite conscientiously, because the patient is alone at the time, and those who stammer when alone are the rare exceptions. What he can do, and what has to be emphasized continually, is to use the newly acquired speech every day to everyone, just as he does in the clinic. If he does not slip into it easily, he should keep steadily at it until it becomes mechanical; but not every one has the character to do this.

In one sense, of course, the "character" of the patient plays a large part in his recovery. But the word is often misunderstood. Will, perseverance, ambition, are essential in the majority of cases. They make up the final third when a patient has been brought two-thirds of the way towards normal speech. But, as with other nervous cases, the stammerer is sometimes misjudged and thought to "give in" to his infirmity; whereas it is not a "trick" to be overcome by "trying." A change has to be brought about in the patient's attitude of mind; something has to relax, to let go before the force of ambition can even be appealed to. There are weak natures and careless ones, but my observation does not point to any greater lack of character on the part of stammerers than of any other class of people. Character—moral force, that is—is not synonymous with mental makeup, and it is the stammerer's mental makeup, for which he cannot be held responsible, which is at the bottom of his trouble. Cure the habit, but cure the mind as well.

POSTPONEMENT OF TUBERCULOSIS SUNDAY.—It is announced that the observance of Tuberculosis Sunday throughout the United States has been postponed from Dec. 3 to Dec. 10. The current week is being observed as "Open Window Week."

FATTY DEGENERATIVE CHANGES IN THE PURKINJE CELL BELT OF THE CEREBELLUM IN EXHAUSTIVE INFECTIVE PSYCHOSES.*

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ABSTRACT.

- I. Purpose of study: To determine, 1, Frequency of fatty change in the cerebellum in toxic condition; 2, Element most affected; 3, Extent of fatty change; 4, Relation to glia cell increase.
- II. Material used included various toxic and exhaustive, or infectious, conditions, controlled by arteriosclerotic and dementia precox material.
- III. Staining methods—Scharlach R. in frozen sections. Cresyl violet in frozen sections.
- IV. Recital of cases: 1, Clinical features; 2, More important post-mortem features; 3, Cellular changes in cerebellum.
- V. Summary of cerebellar cellular changes.
- VI. Discussion of changes: 1, Relation to duration of toxemia; 2, Relation of fatty to glia change; 3, Occurrence in other psychoses.
- VII. Conclusions.

RECENT advances in the physiology of the cerebellum, as reviewed, for example, by Mills and Weisenburg (*Jour. Amer. Med. Assn.*, Nov. 21, 1914), show that the function of this organ (probably represented by the Purkinje cells) is to maintain synergic control of movements. While certain portions seem more concerned with certain complex acts, localization is not sharply defined. The organ probably acts more as a unit than does the cerebrum. Exhaustive infective psychoses, presenting as they do, asynergic symptoms, as tremors, asthenia, atonia, ataxia, seemed to offer a good field for the study of cerebellar changes, and it was suggested that such a study in toxic states of various sorts would be of value in determining: 1, what element of the cerebellum was most affected; 2, the frequency of fatty change; 3, the extent of that change; and 4, its relation to glia cell increase.

The material at hand consisted of six cases autopsied at the Boston State Hospital by Dr. M. M. Canavan, and includes various toxic and exhaustive conditions.

The Technical Method. Frozen sections, made from formalin-fixed pieces of cerebellum, were

* Read in abstract and demonstrated at the Third Annual Conference on the Medical and Social Work of the Psychopathic Hospital, June 18, 1915. Being Contributions of the Massachusetts Commission on Mental Diseases, Whole No. 159, 1916.17. The previous contribution was by Thomas H. Haines (1916.16, 158), entitled "The Genesis of a Paranoid State," submitted to *Journal of Abnormal Psychology*.

stained with Schearlach R. and counterstained with hematoxylin, giving an intense salmon-red stain to the fat against a blue background. Continuous sections were stained with cresyl violet (Nissl's original stain did not give equally good results with the frozen sections).

CASE 1. Female, single, 66, was admitted Dec. 31, 1910, without a history. She was exhausted and jaundiced. There was a slight fulness over the left thorax. The radial pulse could not be felt. There was marked clouding of consciousness. On attempting to reply to questions her words could not be well made out. She appeared disoriented. She was restless; threw herself about in bed and attempted to get out. She may well have had hallucinations, and screamed at times without apparent cause.

She died Jan. 1, 1911, within a few hours after her admission, and autopsy was performed two hours later. The more important findings were: chronic fibrinous pleuritis, both sides; left hydrothorax with congestion of the left lung; chronic interstitial nephritis; bile capillaries distended, but the duct was patent; a small area of chronic external pachymeningitis over the inferior portion of the left ascending frontal convolution; pia uniformly thickened.

Microscopic examination of the cerebellum showed red staining of many of the small cells in the granule layer and of a large proportion of the small cells in the ganglionic area. Of the ganglion cells, about one-half were markedly affected, nearly all to some extent. The nucleus of many of the ganglion cells was distorted and dislocated, and with the cresyl violet stain tigroid bodies were found to be absent from a larger or smaller portion of the cell. There was little, if any, increase in glia cells.

CASE 2. Male, 39, single, was admitted Feb. 7, 1911, and died within twelve hours. Aside from his having been markedly alcoholic, nothing was ascertained as to his past. Respiration was difficult, and there was evidence of consolidation of the right lower lobe. His pupils were equally dilated, but the neurological examination, as far as it could be made, was otherwise negative.

He was disoriented and so confused as to be unable to give information. He was apprehensive, evidently as a result of hallucinations, and he spoke at one time of seeing rats.

Autopsy was performed 34 hours post mortem. There was found a right lower lobe pneumonia with an accompanying pleuritis. There was some sclerosis of the aorta and of the coronaries; the heart was large, weighing 535 grams. The liver was large and fatty; kidneys showed a chronic interstitial nephritis with an acute degeneration. There was considerable subleal edema.

Microscopic examination showed a few red-stained small cells in the white matter of the cerebellum. Only an occasional cell in the granule layer was affected, but many of the small cells in the ganglionic zone. Of the Purkinje cells, about two-thirds were markedly involved.

In many nearly the whole cell was filled with granules, the nucleus being to one side, the cell misshapen, and with the cell stain, showed marked lack of tigroid bodies and the nucleus often staining quite indistinctly. There appeared to be little neuroglia increase.

CASE 3. A female, 53, married, was admitted May 9, 1911, with a history of having used alcohol moderately. Two weeks before admission, while getting dinner, she sat down, and it was noticed that she could not articulate well. The right side of her face was said to have been drawn down. She complained of a slight headache. When examined, her pupils were irregular, but reacted. There was only slight motion in the right side of the face, the upper part being involved as well as the lower, and the tongue deviated to the right on protrusion. The heart was enlarged to the left. There was no paresis of the extremities and the reflexes were normal. Urine sp. gr., 1035, and contained sugar. She appeared to be disoriented, but to what extent could not be well made out on account of her difficulty in articulating.

During her stay she had convulsive attacks, not accompanied by loss of consciousness, which involved only the right side of the face, the tongue and neck muscles. These clonic spasms lasted from 10 to 20 seconds, and at times occurred as frequently as every one-half to two minutes. She developed a left broncho-pneumonia with slight temperature, and died May 11, two days after admission.

Autopsy a few hours post mortem. More important findings: Hypertrophy of heart with fatty degeneration; fatty degeneration of kidneys; subleal edema with atrophy of the convolutions in the frontal, pre- and post-central regions; irregular sclerosis of the basal vessels.

In the cerebellum the endothelial cells of the capillaries were more markedly involved than in the preceding cases, the red granules being larger. Two-thirds of the Purkinje cells had marked deposits of granules, and very few were not involved to some extent. In this zone the affected small cells formed an almost uninterrupted layer. With the cellular stain, disintegration of the tigroid bodies appeared quite marked. There was some increase in neuroglia cells in the Purkinje layer.

CASE 4. Female, single, 60 years of age. She had always been peculiar and irritable, was inferior mentally and had had a number of illegitimate children. In 1911, one year before admission, she began to fail physically, and examination by a physician showed that she had well advanced pulmonary tuberculosis. At about the same time she developed ideas of hypnotism and of influence.

On admission, Feb. 9, 1912, she was in a much weakened condition, and examination showed a marked involvement of both upper lobes. She was irritable and fault-finding, thought every one was against her, that she was being hypnotized and influenced. Her ideas do not appear to have been at all well worked out. She was oriented and memory seemed good.

She had a temperature from the time of her ad-

mission, often going to 102 or 103 in the evening.

She had attacks of diarrhea. Two days before her death, on Oct. 6, 1912, she developed a left femoral thrombo-phlebitis. She became dyspneic and moist râles were heard throughout the lungs.

Autopsy 3 hours post mortem disclosed advanced pulmonary tuberculosis; tubercles in the liver and spleen; tubercular ulcers in the ileum and colon; thrombosis of left iliac vein. Pia only slightly thickened; nothing else of note in the brain.

Microscopic examination: The cerebellum showed a moderate degree of change, confined mostly to near the ganglionic zone. About one-third of the Purkinje cells showed fat, but the deposit was nowhere very marked. Not many of the cells had nuclei dislocated, and with cresyl violet few showed internal disarrangement. There was some increase in glia in the ganglionic area.

CASE 5. A female, 42, divorced. Her father and mother were both alcoholic. In 1911, two years before admission, she had an operation for carcinoma of the uterus, and a year later began suffering from symptoms of an extension of the growth, pain, incontinence of urine, etc. About this time she began to hear voices, thought people were watching her, and that her food was poisoned. She reacted to these ideas.

When admitted, July 1, 1913, she was poorly nourished, but aside from evidence of extension of the carcinoma to the vesico-vaginal septum, there was nothing of importance found physically. She heard people outside cursing and saying that she was immoral. They were digging her grave. She was apprehensive and yelled out of the window at her tormentors. A little later the nurses seemed to talk among themselves about her and do other things to annoy her. She was oriented. She grew weaker, had vaginal hemorrhages, and died July 27, 1913.

Autopsy performed 3 hours post mortem showed a hydronephrosis from obstruction of the vesical orifice of the ureter by the carcinomatous growth. The pia was not thickened, and there was no sclerosis of the cerebral vessels. The brain substance was of a decreased consistency in both parietal regions.

The cerebellum showed considerable change in the capillaries, the red granules often being large. There was a fairly marked involvement in the granule layer and of the small and ganglionic cells in the Purkinje layer, about one-half of the latter being markedly affected. Considerable derangement of the internal structure of the ganglion cells and an increase in glia cells in this region was noted.

CASE 6. A male, single, 57 years of age, was supposed to have had a pulmonary trouble for some time, but for only a few weeks had been acting peculiarly. He was restless and irritable, tearing up his bedding at night without giving any reason for doing so. He was said to be untidy and resistful.

On admission, Feb. 7, 1914, he was very weak and poorly nourished. He was scarcely able to talk in a whisper, and had a cough. He had a

right scoliosis and a lordosis. There was dulness over both apices. He had a low, irregular temperature. Tubercle bacilli were never found in the sputum. He refused to cooperate, and when questioned would cover his head and refuse to explain himself. He seemed to be poorly oriented, but sense falsifications and delusions, while probably present, could not be brought out. He died March 13, 1914.

Autopsy, 46 hours post mortem. Carcinoma of upper and lower thirds of esophagus. Nodules over surface and peribronchial infiltration of right lung. Pia slightly thickened; amount of cerebrospinal fluid large.

The capillaries in the cerebellum were involved to very limited extent, and the changes were not very marked anywhere. In the ganglionic zone many of the small cells and about one-fifth of the Purkinje cells showed red granules. Many of the ganglion cells, stained poorly with cresyl violet, were misshapen and had the nucleus to one side. There was an increase of glia cells in the outer portion of the granule layer and in the ganglionic area.

These cases seem to possess sufficient clinical features to warrant including them in the exhaustive-infective group. Cases 1 and 2 are acute deliria; 3 diabetes with cerebral symptoms; 4, 5, and 6 are cases of longer duration in which the physical condition seems to bear a direct causative relation to the mental symptoms.

The changes found in the cerebellum may be summarized as follows:

1. **Capillaries.** A varying number of endothelial cells showed fine red granules, usually filling the whole cell. At times several adjoining cells were affected. The changes in the capillaries were confined largely to the granule layer and especially to the vicinity of the Purkinje cell belt, but a few of the vessels in the white, and also a few in the molecular, layer and in the pia showed affected cells in small number.

2. **White Matter.** An occasional cell, especially near the granule layer, showed red staining.

3. **Granule Layer.** A good many cells showed fine red granules surrounding the nucleus, the larger cells seeming to be especially affected. Changes were more marked toward the ganglionic zone.

4. **Ganglionic Zone.** Many of the small cells in this area (glia cells) showed red granules thickly set in the protoplasm, in some cases nearly all the cells being affected. The number of Purkinje cells affected in different cases varies from few to nearly all. Fine, intensely red granules were thickly set in the protoplasm, the collection being supra-nuclear or to the side when the nucleus was dislocated, as was often the case.

The infra-nuclear portion was seldom involved unless the whole cell was. With the cresyl violet stain, the Purkinje cells showed poor staining of the tigroid bodies correspond-

ing to the area stained red with Scharlach R. Also a varying amount of distortion of the cell body and nucleus was present.

Glia increase, especially in the Purkinje cell belt, was more or less apparent in chronic cases, these cells often showing fatty change.

5. *Molecular Layer* showed no fatty deposit, as a rule.

It is seen, then, that cell degeneration and fatty deposit is confined quite closely to the Purkinje cell belt, involving the capillaries and small cells, as well as the ganglion cells, especially in this region. In Cases 1, 2 and 3 (acute), the fat deposit involved a larger proportion of Purkinje and other cells, and the individual cells were affected to a more marked degree than was the case in Cases 4, 5, and 6 (chronic). In the more acute cases there was considerable internal disarrangement of the cell-structure, poorly stained areas in the chromatin, dislocation of the nucleus, but little, if any, glia increase. In the more chronic cases there were more shrunken and distorted cells, and there seemed to be an increase in glia cells that corresponded in a general way with the degree of Purkinje cell destruction. In Case 4 destruction was not marked, neither was the glia increased, while in Cases 5 and 6 both were quite advanced. The acute cases, then, showed in the Purkinje cell belt:

1. Marked fatty deposit.
2. Acute cellular changes.
3. No glia increase.

The chronic cases showed:

1. Less marked fat deposit.
2. Cellular change of a more chronic type, as shrinking, distortion, and complete destruction.
3. Glia cell increase, corresponding to the Purkinje cell destruction.

Of other cases examined, two, clearly of arteriosclerotic variety, but complicated by carcinomata, showed fatty changes in the cerebellum corresponding in every way with those described, but of less degree. The cellular destruction was quite marked in these two cases, as was the glia proliferation in one of them. In two precox cases there was no fat deposit in the cerebellum. In one case of Korsakoff's psychosis, fatty change in the cerebellum was confined to a few capillaries. A senile case showed changes similar to the arteriosclerotic cases. Two parietics showed no fat in the cerebellum.

So far as our investigation has extended we have found that:

1. Fatty changes of a type described in detail above occur in the cerebellum, especially in the Purkinje cell belt, in conditions which interfere with the nutrition of the brain, as arteriosclerotic brain disease, senile dementia, and in exhaustive infective psychoses.

2. The fatty changes are more marked in the toxic group than in others that we have examined.

3. The more acute the process, the more marked is the fat deposit.

4. In chronic cases the fat deposit may not be large, but as cell destruction advances, the number of glia cells increases.

5. This study demonstrates in a new way the great lability of the Purkinje cell region, of which there has been increasing evidence from other methods of investigation for many years past.

THE YERKES-BRIDGES POINT SCALE; AS APPLIED TO CANDIDATES FOR EMPLOYMENT AT THE PSYCHOPATHIC HOSPITAL.*

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At the suggestion of Dr. Herman M. Adler, chief-of-staff, the Psychopathic Hospital has adopted the method of submitting to psychological examination every candidate for employment as clerk or attendant. It is the object of this paper to present the results obtained from the examination of the first sixty candidates.

Candidates. The candidates, both male and female, were referred to the Hospital by different employment agencies of Boston, with a few exceptions. The majority of them had attended grammar school, only 28% having advanced to the high school. Their ages varied from eighteen to fifty-five, the average age being twenty-five.

Method. After the candidate had applied for work to the superintendent of nurses, and his references had been verified, he was asked to report for a psychological examination. This examination consisted principally of the Yerkes-Bridges point scale, with the multiple choice,[†] and a few other supplementary tests given at the discretion of the examiner.

The point scale, devised in 1914 by Robert M. Yerkes and James W. Bridges, is a method for determining the degree of intellectual development. It comprises twenty tests, to each of which a certain credit is allotted. The subject is graded according to his reactions, with full, partial, or no credit; when the examination is completed, the sum total of these credits indicates his mental grading in percentage.

* Read in abstract at the Third Annual Conference on the Medical and Social Work of the Psychopathic Hospital, June 18, 1915. Being Contributions of the Mass. Commission on Mental Diseases, Whole No. 160, 1916.18. The previous contribution was No. 159 (1916.17), by Egbert W. Fell, entitled "Fatty Degenerative Changes in the Purkinje Cell Belt in Exhaustive Infective Psychoses." BOSTON MEDICAL AND SURGICAL JOURNAL, December 7, 1916.

† A method devised by R. M. Yerkes for comparative study of individual reactions of human and infra-human subjects.

Results. From February to June, 1915, sixty candidates were examined. With the exception of two, who applied for position as clerk, all of the applicants solicited work as attendants. The following table shows the classification of these candidates according to their degree of intelligence:

TABLE I.

CLASSIFICATION OF CANDIDATES ACCORDING TO MENTALITY.

Normal	63%
Slightly subnormal	17%
Intellectually inferior	20%

In the normal group, which includes only 63% of the whole, are found all applicants who obtained a score above 82 points, that is, who graded above the standard for the mentality of 15 years. (See "A Point Scale for Measuring Mental Ability," page 67.) Of these presumably normal candidates,

25 obtained	82-90 points
9 "	91-95 "
4 "	96-98 "

In the second group (17% of the whole), comprising candidates of slightly subnormal intelligence, are included those applicants who obtained between 76 and 82 points credit.

In the third group, we find 20% of the candidates. These graded below 76 points, and their reactions indicated intellectual inferiority. According to the norms of the point scale (see "A Point Scale for Measuring Mental Ability," page 67), these subjects did not attain a mental rating equal to that established for the intelligence of a 12-year-old child, namely, 77 points. Of the subjects included here,

7 obtained	60-69 points
5 "	70-75 "

It is noticeable that a history of alcoholism, immorality, or delinquency was obtained from many of these individuals.

The following charts represent, respectively, the distribution of mental grading and the distribution of education received by the applicants examined.

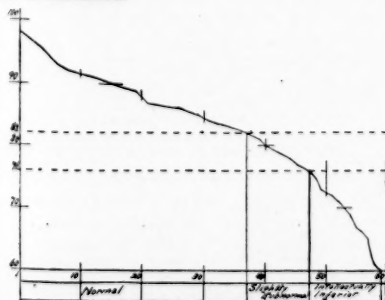


CHART I.

DISTRIBUTION CURVE REPRESENTING GRADING OF 60 CANDIDATES FOR EMPLOYMENT.
Ordinates—points scored; Abscissae—number of subjects.

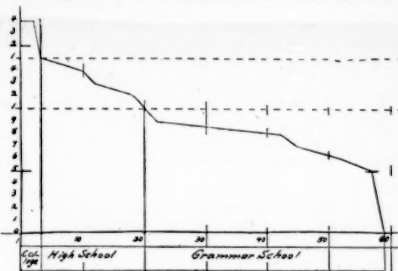


CHART II.

DISTRIBUTION CURVE REPRESENTING EDUCATION OF 60 CANDIDATES FOR EMPLOYMENT.
Ordinates—school years; Abscissae—number of subjects.

Table II has been arranged to illustrate the variation in the responses of the sixty subjects to one of the twenty tests of the point scale, namely, Test 13, in which the subject is required to name as many words as possible in three minutes.

TABLE II.

RATE OF FREE ASSOCIATIONS.

NO. OF WORDS	NO. OF SUBJECTS
20-29	3
30-39	3
40-49	4
50-59	6
60-69	7
70-79	14
80-89	10
90-99	6
100-126	7

From the above table we obtain the following results:

Mode	70-79
Median	70-79

The exact median proves to be 75 words, which coincides with the minimum requirement for a normal adult. The lowest number of words said by any subject was 21, the highest number, 126. It is interesting, also, to note that 26.6% of the subjects fail to meet the Binet-Simon requirement for the twelve-year-old mentality.

The following table presents the individual record of each candidate.

TABLE III.

RECORD OF SUBJECTS TESTED.

SUBJECT	SEX	AGE	POINT SCALE SCORE	EDUCATION	CLASSIFICATION
A	M	35	80	College grad.	Slightly subnormal*
B	M	29	96	High sch. 2	Normal
C	M	21	90	Gram. sch. 8	Normal
100	F	20	89	High sch. grad.	Normal
101	M	29	72	Gram. sch. 6	Intellectually inferior
102	M	28	98	Gram. sch. 8	Normal

* History of epilepsy was obtained from this subject.

TABLE III.—continued
RECORD OF SUBJECTS TESTED.

SUBJECT	SEX	AGE	POINT SCALE SCORE	EDUCATION	CLASSIFICATION
103	M	34	69	Gram. sch. 8	Intellectually inferior
104	M	26	79	Gram. sch. 7	Slightly subnormal
105	M	26	81	Gram. sch. 8	Slightly subnormal
106	M	27	83	Gram. sch. 8	Normal
107	M	24	93	High sch. grad.	Normal
108	M	28	75	Gram. sch. 3	Intellectually inferior
109	M	34	96	Gram. sch. 8	Normal
110	M	34	81	Gram. sch. 5	Slightly subnormal
111	M	25	89	Gram. sch. 9	Normal
112	M	24	89	Gram. sch. 8	Normal
113	M	35	91	Gram. sch. 8	Normal
114	F	23	85	High sch. 3	Normal
115	M	27	96	Gram. sch. 8	Normal
116	F	23	82	Gram. sch. 8	Normal
117	M	29	85	Gram. sch. 8	Normal
118	M	26	92	College grad.	Normal
121	M	18	89	High sch. 2	Normal
122	M	21	76	Gram. sch. 8	Slightly subnormal
124	F	28	87	High sch. 4	Normal
125	M	40	83	High sch. grad.	Normal
126	M	19	91	High sch. 3	Normal
127	M	26	78	Gram. sch. 9	Slightly subnormal
128	M	30	86	Gram. sch. 6	Normal
129	M	34	86	High sch. grad.	Normal
130	M	22	82	College 1	Normal
131	M	23	72	Gram. sch. 5	Intellectually inferior
132	F	23	79	Gram. sch. 8	Slightly subnormal
134	M	55	69	Gram. sch. 5	Intellectually inferior
135	M	31	66	Gram. sch. 6	Intellectually inferior
136	M	21	93	High sch. 1	Normal
137	M	23	61	Gram. sch. 7	Intellectually inferior
138	M	20	78	Gram. sch. 5	Slightly subnormal
139	M	23	83	High sch. 2	Normal
140	F	35	84	Gram. sch. 8	Normal
141	M	24	90	Gram. sch. 8	Normal
142	F	22	95	High sch. 1	Normal
143	F	22	67	Gram. sch. ?	Intellectually inferior
144	M	37	90	High sch. 2	Normal
145	M	30	91	High sch. grad.	Normal
146	F	22	60	Gram. sch. 6	Intellectually inferior
147	M	24	86	Gram. sch. 6	Normal
148	M	35	85	Gram. sch. 8	Normal
149	M	29	84	High sch. 2	Normal
150	M	23	82	High sch. 2	Normal
151	M	27	86	High sch. grad.	Normal
152	M	32	91	Gram. sch. 6	Normal
153	M	21	86	Gram. sch. 8	Normal
154	M	22	76	Gram. sch. 8	Slightly subnormal
155	M	38	65	Illiterate	Intellectually inferior
156	M	25	71	Gram. sch. 7	Intellectually inferior
157	M	22	92	Gram. sch. 8	Normal
158	M	21	77	Gram. sch. 6	Slightly subnormal
159	M	29	73	Gram. sch. 5	Intellectually inferior
160	F	23	88	Gram. sch. 8	Normal

CONCLUSIONS.

The following conclusions are drawn from the results presented in this paper:

1. A high percentage of defective and other-

wise mentally incompetent individuals is found among candidates seeking employment as attendants in state hospitals.

2. It is desirable that each candidate for employment should be submitted to a systematic psychological examination for estimating his general intelligence.

3. These results, though preliminary, emphatically indicate that the federal and state civil services might well consider the plan of using reliable intelligence tests in their routine examinations.

REFERENCE.

- * Yerkes, R. M., Bridges, J. W., Hardwick, R. S.: A Point Scale for Measuring Mental Ability, Baltimore: Warwick and York, 1915.

THE INTENSIVE GROUP OF SOCIAL SERVICE CASES.*

By MARY C. JARRETT, BOSTON,

Chief of Social Service, Psychopathic Hospital.

WHEN the Social Service in this hospital was begun, two years ago, one year after the hospital opened, our first report was an orientation study of our function; next an estimate was attempted of the amount of social work there would be; and this was followed by further notes on the nature and size of our problem, with an estimate of the number of social workers who would be needed.† This year is evidently the time for a report on what we have done.

The nucleus of all our work is the intensive group of cases, and this report will go into detail in regard to them only.

By intensive, we mean those cases in which the Social Service Department has assumed responsibility for making an inquiry into the social condition of the patient and his family, and for taking steps to secure the greatest measure of social well-being possible for them.

* Read at Third Annual Conference on the Medical and Social Work of the Psychopathic Hospital, June 18, 1915. Being Contributions of the Massachusetts Commission on Mental Diseases, Whole No. 161 (1916.19). The previous contribution, 160, 1916.18, was by G. S. Rossy, entitled "The Yerkes-Bridges Point Scale: as Applied to Candidates for Employment at the Psychopathic Hospital," BOSTON MEDICAL AND SURGICAL JOURNAL, Dec. 7, 1916.

† Officers of the Psychopathic Hospital, medical and social, have published the following articles on social service and allied subjects:

- (1914.4) E. E. Southard. Feeble-mindedness as a Leading Social Problem.
(1914.5) Mary C. Jarrett. The Function of the Social Service of the Psychopathic Hospital.
(1914.19) A. Warren Stearns. The After-Care Program and Results of the Psychopathic Hospital.
(1913.33) A. Warren Stearns. Notes on After-Care and Moral Suasion Work with Alcoholics in the Out-Patient Department of the Psychopathic Hospital.
(1913.7) Mary C. Jarrett. Statistical Notes on the Need of Social Service in the Psychopathic Out-Patient Department.
(1914.20) Mary C. Jarrett. Further Notes on the Economic Side of Psychopathic Social Service.
(1915.) Helen M. Wright. Examination and Prophylaxis for Syphilitic Patients and Their Families: Methods of Investigation at the Psychopathic Hospital, Boston, Mass., 1915.

In another group, known as Slight Service cases, the assistance given by the Social Service does not involve an inquiry into the patient's general situation beyond the apparent facts, nor responsibility beyond the particular service rendered. These two divisions of social case work now seem to be generally recognized in most hospital social service departments.

In our two years' existence we have dealt with 440 cases in the intensive group, of which 68 are still under care. It happens that 440 is somewhat above the number of cases which, according to our estimate two years ago, two social workers would expect to deal with in two years. The hospital has only two social workers on the pay-roll of the State; but the help of students and other volunteers and several privately paid workers has made it possible to develop, in addition, several other lines of work—1238 cases have been dealt with in the slight service group; a Men's Club for discharged alcoholic patients has met once a month; a routine system of following up all out-patients who fail to report when due has been in operation a year and a half. Two pieces of work have been undertaken with the combined ideas of treatment and research,—first, a study of opportunities for psychopathic patients in industry; and second, a routine method of securing examination of the families of all syphilitic patients.†

The 440 intensive cases included 186 men, 185 women, and 69 minors. The following types of mental disorder and defect were represented:

Alcoholic	74
Backward	2
Delinquent	16
Drug habit	3
Epilepsy	16
Feeble-mindedness	35
Hysteria	10
Insanity	147
Neurasthenia	10
Not insane	47
Psychoneurosis	22
Psychopathic personality	7
Syphilis	18
Unclassified	14
All other diagnoses	18
Not made	1

The largest group were the insane, 36%+.

- 17% were alcoholic.
- 11%+ were psychoneurotic.
- 8% were feeble-minded.
- 3% were epileptic.
- 10%+ were diagnosed as not insane.

The remaining 14%, covering all other diagnoses, included syphilis, drug habit, delinquency, etc.

The different types of action taken may be classified as follows:

- In 139 cases advice was given.
- In 124 cases history needed by the doctors to make a diagnosis was obtained.
- In 101 cases the patient was kept under supervision.

† Examination and Prophylaxis for Syphilitic Patients and Their Families: Methods of Investigation at the Psychopathic Hospital, by Helen M. Wright, Boston, Mass., 1915.

In 39 cases the patient was referred to another agency.

In 23 cases arrangements for the patient's discharge were made.

In 14 cases other members of the family were brought under care.‡

By giving advice, we mean outlining a plan and, if necessary, assisting the patient or his family to follow it. An illustration of this class is the case of a backward child of eight in a family that contains four other defectives. The little girl is to be sent to the country for the summer. She is the original patient, but we now have the epileptic father as an out-patient. We keep general oversight of a feeble-minded son who is working, and we expect to persuade the father to make application to the School for the Feeble-Minded for a daughter of fourteen. A younger son is under observation in the out-patient department, and the over-burdened mother, by our advice, comes there also for re-assurance in regard to her own mental condition.

An example of history necessary for the diagnosis is the case of a woman of thirty, daughter of a rag-picker, who had been supporting himself and her and his blind wife by begging, with the story of his daughter's broken-down health.

She was at first thought to be hysterical and was about to be returned to her father, but the history showed marked deterioration, and she was committed to a state hospital with the diagnosis of dementia precox.

Arrangements made for a patient's discharge may be illustrated by the case of an Irish servant girl, sent here for observation because she refused to eat or speak. She was pregnant and subnormal in intelligence. After investigation it was decided to secure her admission to a maternity home. The baby died and the girl is doing well in a position under the oversight of the Home.

An example of a case referred to another agency is a girl of fifteen, who had run away from home disguised as a boy. She was uncontrollable at home, and her parents were on the point of sending her to a reformatory. She was diagnosed as not insane and not defective. Under the care of the Children's Aid Society she has remained at home, worked regularly and attended night school, and is much improved.

To illustrate prophylaxis for other members of the family, the case may be given of a man with general paresis, whose wife and four children were brought in for examination. One child, a nervous, high-tempered boy, was put under treatment for syphilis.

The class of supervision cases have been left until last because they are the most intensive part of the group, and I want to speak of them in some detail. By supervision, we mean continuous oversight of a patient over a considerable period, from three or four months, to an indefinite time.

For example, a girl of sixteen, who was ad-

‡ See Appendix for illustrative cases.

mitted to the House two years ago twice in one month, with hysterical convulsions, is still under supervision. She has been educated in the control of herself, and has been helped financially so that she could study dressmaking. She has had several convulsions, but they have been much less severe and at longer intervals; and, in general, she is now in good health and good spirits.

The number of supervision cases dealt with was 101,—48 men, 41 women, and 12 children; 88 were at one time house-patients and 12 were out-patients only.

- 59 have improved.
- 42 have not improved.
- 18 were readmitted to the hospital and again discharged.
- 11 were committed to a state hospital.
- 3 went to reformatories.
- 1 went to an almshouse.

Of the 59 improved patients, 7 were re-admitted to the House and discharged after a short period. In 22 cases other members of the family needed assistance. For example, in the case of the hysterical girl just referred to, the father, who is alcoholic, has been made to report to the Out-Patient Department, and is somewhat improved. The purpose of our supervision may be classed as *after-care* in 37 cases, that is, no marked improvement in the patient's mental condition could not be expected; and as *prevention* in 64 cases, in which, under favorable environmental conditions, the patient might be expected to recover or to show marked improvement.

Some conclusions drawn from the study of 101 supervision cases are as follows:

1. The value of temporary residence in the Hospital as a therapeutic measure in some cases, shown in 7 of the 59 improved cases.
2. The possibility of a greater proportion of improvement than the 58% shown in this group through more careful selection of cases, since it is possible with a limited staff to care only for selected cases.
3. More attention to out-patients in the earlier stages of mental difficulties, with a view to prevention. It is probable that in our supervision work, there should be a smaller proportion of after-care than is indicated by the 37 cases in this group, compared with 64 cases for prevention.
4. A routine examination of every patient to determine his need of social care, to be held in view as an object when funds become available for a larger staff.

A beginning has been made in tabulating the social interests involved in psychopathic social service cases, following the division outlined by Roscoe Pound in his articles on "Interests of Personality," published in the *Harvard Law Review*, February and March, 1915, as an advance chapter of his projected book, "Sociological Jurisprudence." He distinguishes three

classes of rights or interests of the individual in relation to the environment,—individual, social and public. The study that we are making will be reported upon later in detail, and one conclusion only seems interesting to be mentioned now. Among the 440 cases studied, individual interests are involved to a greater extent than either of the other two classes, 647 times; social interests come next and are involved 544 times; while public interests are involved 409 times. The indication, therefore, is that the concern of psychopathic social service is primarily with the care of the individual; next, with the welfare of society, and finally, with the public good as represented in public institutions.

APPENDIX.

ILLUSTRATIVE CASES.

GROUP I. CASES IN WHICH THE PATIENT WAS KEPT UNDER SUPERVISION.

CASE 1. Bessie E., a girl of nineteen, was referred to the Social Service for supervision when discharged from this hospital about a year and a half ago. Her diagnosis was hysteria, with a question of dementia precox. She believed that her face was so ugly and "silly" that nobody could bear to look at her, so she would sit shrinking into a corner with her head turned against her shoulder, twitching and wriggling. She spoke only in a whisper, haltingly, and with a great effort. She was unfit for any ordinary occupation and very unhappy.

Her family consists of the mother, who has had two attacks of manic-depressive insanity, an excitable sister who works as a bookkeeper, a brother in school, and the mother's mother, 75 years old. The mother and sister were over-solicitous about Bessie and worried her by fussing over her. It was arranged that she should live with an aunt near the hospital and attend a cooking class and a gymnasium class at a neighborhood house. She also came to the hospital regularly for knitting lessons. In the beginning it took her a full minute or more to make one stitch. She improved and was happier. In the spring she was sent to a convalescent home in the country where her sister paid her board, and she gained noticeably in self-control while there. Arrangements were then made for her to board in a small working girls' home and work secured for her at a playground to play with the children, for which she was paid through a special donation. It is now planned to send her for two months to a girls' camp, under the management of a woman physician, money for her expenses having been raised by private subscription. She has shown marked improvement, and our hope is to continue to provide a thoroughly favorable environment until she has either recovered from her acute symptoms, or has shown a decided form of mental disease.

CASE 2. Harriet Q., aged 55, heard the big clock on her mantel talk to her in a vindictive manner. She had twice in two months become so violently enraged by it, that her husband had had to send her to the Psychopathic Hospital. When the time came for her second discharge, an effort was made to alter her home life, so that she would not be alone and unemployed as much as she had pre-

viciously been. She took daily exercise out of doors, and through the coöperation of her relatives was visited, and kept busy. She reported regularly to the Out-Patient Department every two weeks and was no longer troubled by the clock. Her diagnosis was senile dementia.

CASE 3. James R.; was ready to be discharged, with a diagnosis of locomotor ataxia. He had been sent here because he had suicidal tendencies. He had been a teamster, and lived, with his wife, in the family of a married step-daughter, who has three children. We persuaded him to go to the State Infirmary because the doctors advised his having hospital care. After six weeks he went home because he was homesick. He spoke no English and could not make friends. The support of the patient was a problem, as the son-in-law was already over-burdened. The Overseers of the Poor were applied to, and gave \$2.00 a week. Arrangements were made with the district doctor to supervise the patient, and when, in two months, he had one of his attacks, the doctor sent him to the City Hospital, where he stayed two weeks. Recurring attacks of intense pain, with suicidal ideas, are to be expected. Attempts to secure some light employment for him resulted in a course in chair-caning at the Industrial School for Crippled Children. He did some work there until the school closed in the summer, and then a position was found for him in a factory, where, though the conditions were as favorable as possible, the strain was too much for him. He is very helpful in work about the house, and is now making a grindstone with which he hopes to get work sharpening knives.

The weekly visit to the family has reassured them in regard to their fear of suicide, and has also been the occasion for some practical help and advice. The custom of keeping bantam hens in the house was eliminated, and later a family of kittens disappeared after comment from the visitor. A bed was supplied for two of the children who had been sleeping with the patient and his wife.

The Board of Health found the family overcrowded and told them to move. This trial was averted, as the agent of the Board was persuaded to remeasure the tenement, and discovered that it was his mistake. As the family were obliged to eke out their expenses by having two boarders in one of their rooms, they were more crowded than they should be, and we were hoping to do away with the boarders by securing more financial aid for the family, when the daughter decided to move to another tenement with her family. She needs an operation badly, which we hope to persuade her to have, after the baby recovers from an attack of dysentery, which she had this summer. She had been left weak and thin, and is still under the care of the district doctor and nurse. A vacation in the country was secured for her and two of the children during the hottest weather.

CASE 4. John O., a tailor, aged 39 (diagnosis, dementia precox, catatonic), had a wife and two children to support. His former employer, for whom he had worked thirteen years, was afraid of him when he returned from the hospital, and was quite satisfied with a younger man who was doing the patient's work for less money. Work had been scarce, and there seemed to be no place for a tailor who had once been called insane. Several visits

from the agent were made to the former employer before he could be convinced that the patient was now in condition to return to his work. He did, however, take him back and has allowed him a half day monthly to report at the Out-Patient Department of the Hospital.

CASE 5. Charles O., 17 years old, was before the court in a nearby town for setting fires. He had set three different fires within three months, each time playing the hero by discovering the blaze and helping to put it out. He was otherwise a good boy, mechanically inclined, but poor in school work. Before committing him to a reformatory, the court sent him to the Out-Patient Department for a psychological examination. In this he ranked above the normal, but showed a tendency to react too quickly, making conclusions before he had considered the whole situation. The court was advised to put him on probation and, as he had won general disfavor in his home town, to send him to Boston, to be under supervision of the hospital Social Service. He secured good lodgings where he would have the companionship of young men of his own age and temporary work, which would give him a chance to show what he could do. He gained the friendship of his employer, and appeared to be making good, when without warning of any mental disturbance, he set a fire in the building where he lived, and was again the hero of the occasion. As he had not improved in an environment thoroughly favorable, the court decided to treat him as a defective. After a period of observation in a state hospital, he was committed to a school for the feeble-minded.

CASE 6. John L., aged 39, a man of agreeable manners and appearance, educated in Ireland, where he nearly completed a medical course, is now employed by a large drug firm, who say he is extremely valuable to them.

He has been married six years and has two children. Two and a half years ago he came to the United States, and a year and a half later, brought his family. At intervals since his marriage he had had spells of drinking, when he was violent and abusive. During an attack, which lasted seven months, he required the care of male nurses.

He was brought into the hospital by the police because he had been abusive to his wife, threatened to choke her, and had thought people in adjoining apartments were talking about him. After two weeks he had recovered his mental powers. His employer, on the strength of assurances from the hospital, gave him back his position. Communication was established with his wife, who was seen at intervals at their home and at the hospital. She is an intelligent woman and realizes that there is danger of her husband's doing harm to her and the children when he is drinking. As she is without relatives or friends in this country, she has been especially grateful for the moral support of the social worker.

In June she came for advice, saying that the patient was acting strangely, and had been drinking a little. She was told to have the police bring him into the hospital again at the first sign of violence. Two weeks later she sent a messenger for advice as the patient was drinking heavily and had threatened her. She was unwilling to call in the police unless it was necessary. We then arranged for the police to bring him into the hospital. He cleared up in

ten days, again returned to his position, and has been in good condition since.

GROUP II. CASES IN WHICH ADVICE WAS GIVEN.

CASE 1. Arthur R., an Italian, 34, became violent at home, and through this hospital was committed to a state hospital, with the diagnosis of dementia precox. His wife and two children, aged $5\frac{1}{2}$ and 4 years, were given lodgings with a relative who could afford the room, but had little means with which to provide food and clothing. The wife was restless, and worried constantly about her own dependence and her husband's illness. Work was, therefore, found for her in a candy factory, where she earned good wages as a chocolate dipper. The children were admitted to a Day Nursery in order to relieve the relatives of their noise and the quarreling between them and her own children. Subsequent visits found the wife happy in being able to contribute toward her own support, and the relations between the relative and the family were unstrained.

CASE 2. Beulah V., a quiet, refined woman, unmarried, was sent to the Psychopathic Hospital as a voluntary patient through a social agency, in the hope that a diagnosis might aid them in making future plans for her. It had seemed impossible to find her any work that she liked or would keep.

After a few days in the hospital, she decided not to remain, but was persuaded to stay as long as the doctors advised. After observation for nearly a month a temporary diagnosis of psychoneurosis was made, with the question of a possibility of early dementia precox. She returned to the social agency, tried several kinds of work, but finally gave up trying and went to live with an aunt. After a few weeks she refused to eat with the family, shut herself in her room alone, became suspicious of her aunt, and would not talk. The aunt, an intelligent woman, was instructed how to deal with the patient. She is keeping a diary of her conduct and changing moods, and in case she becomes unmanageable, will notify us, so that, if necessary, she can be brought back to the hospital.

CASE 3. Edward L., a feeble-minded boy of 15, was a great care to his mother, a woman of refinement, who had to support him and another child, a bright girl of ten years. Edward was masturbating badly, and had become so uncontrollable at times that he would beat his head against the wall and act more like an animal than a boy. A special effort was made to have him admitted to the already crowded school for the feeble-minded, and within three months the patient was having the care and training that he needed.

CASE 4. Anna I., a girl of 17, with a diagnosis of imbecility, came to the Out-Patient Department with her mother, who asked for help in getting her into the School for the Feeble-Minded, as she could not manage her. Over a year before, an application had been filed. We found that the girl could be received at Wrentham, and then the mother refused to sign the commitment paper. The father was sick in a hospital, the mother was too sick to be summoned into court, and the neighbors were supplying food and fuel. The Jewish Charities promised aid. After repeated efforts for two months,

during which the mother changed her mind many times, she was persuaded to sign the commitment paper, and the girl was sent to Wrentham.

GROUP III. CASES IN WHICH THE PATIENT WAS REFERRED TO ANOTHER SOCIAL AGENCY.

CASE 1. Martha O. The Brookline Court sent for observation a girl of fifteen, stating that she would stay away from home all day and often all night, and had recently gone to a hotel with a young man who promised to take her to New York. A month before she had attempted suicide. The patient was not insane nor intellectually defective. Her mother, a capable woman, employed in a position where she is well thought of, was at the end of her resources in managing the girl. By appointment, an agent from the Children's Aid Society came here to meet the mother. She has since had oversight of the girl, and reports that she has a position at clerical work in the same place with her mother, at \$8 a week; that she goes to gymnasium, and is doing very well.

CASE 2. Bessie N., had had an illegitimate child, and in the course of her efforts to find the deserting father, with the hope of making him marry her, her mind had become slightly unbalanced. In the hospital she recovered quickly.

With the help of her sister, who considered such a marriage inadvisable, and with advice from the Legal Aid Society, Bessie was persuaded to give up her search and accept the care of her child herself. It was found that she had an acute infection of gonorrhea. On her discharge from this hospital, she was referred to the proper department of a general hospital through their social service department, and she has been reporting regularly for treatment.

CASE 3. Julius R. was brought in by the police, because he was found trying to escape from imaginary people who were throwing things at him. The patient told a story that his wife was unfaithful to him and had driven him from their home in Brockton. He admitted that he was alcoholic, but claimed his wife was slack, and neglected both him and the children. The Society for the Prevention of Cruelty to Children in Brockton were asked to make inquiries about the patient, and to look into the condition of the children. The patient was transferred to Taunton State Hospital and later allowed to go home. The S. P. C. C. have the family under supervision, and have reported to us that the patient is apparently doing much better, and the wife, a woman of low mentality, after repeated efforts, has been made to clean up the house. The St. Vincent de Paul Society are paying the rent until the patient gets a steady job.

CASE 4. Timothy V. The patient, while in the hospital, said he was worried because his wife and two children had no means of support. A visitor was at once sent to see the wife, and though she was out, learned from the landlady that this was true. The Associated Charities were asked to help her, and the wife was seen, when she came in to visit her husband, and was put in communication with their office. She was also directed to take one of the children to the Children's Hospital. The patient was discharged to the Out-Patient Department with a question of cerebrospinal syphilis.

He was later committed directly to the Boston State Hospital, and the Associated Charities continued to assist the family.

GROUP IV. CASES IN WHICH PROPHYLACTIC MEASURES WERE TAKEN FOR OTHER MEMBERS OF THE PATIENT'S FAMILY.

CASE 1. Lester A., a feeble-minded boy; should have been sent to a school for special training, but as there was no vacancy, it was necessary to supervise him in his home. A few visits brought out the fact that his mother was suffering from violent headaches and "rheumatism." After an examination in the Out-Patient Department, she was advised to take hygienic baths, and gradually improved. It was also learned that her husband, a painter, was supposed to have been so affected by a fall on his head some ten years before, that his friends had not considered him normal since. He had been getting gradually worse, and had been suffering from "spells" of some kind. After much persuasion, he also came to the Out-Patient Department, and his examination showed a low grade of mentality and signs of lead poisoning. He was sent to another hospital for treatment. The mother's headaches have improved. The father was operated upon for appendicitis, and during his convalescence the family was aided financially through two charitable agencies. On recovery, he obtained a position in the Park Department. The original patient, Lester, is still at home and doing fairly well in a class for backward children.

CASE 2. Lester K., 12 years old, two months before his admission had become blind after a convulsion. He appeared frightened, his speech was defective, and he had lost flesh rapidly. The Wassermann reaction for syphilis was found to be positive, and a diagnosis was made of juvenile paresis. His parents took him home, although they were advised to have him committed to a state hospital for the insane. The mother and two brothers were examined in the Out-Patient Department and given the blood test for syphilis. The younger boy of six showed a negative reaction. In the case of the older boy, fourteen years, the test was unsatisfactory and he is to return for a second test and also for a psychological examination, as he is reported to be "dull." The mother's examination has not yet been completed.

The father was also examined and found to have a positive Wassermann reaction. Inquiry from a physician showed that he had previously been treated for syphilis. He was advised to have further treatment at once.

The father's physical condition prevented his earning enough to support the family, and the mother was obliged to go out to work. The care of Lester was too great a burden, but the parents were unwilling to send him to an institution. As the home of the family is in another city, the case was referred to the local Associated Charities. They report that the father is under the care of a physician, and the mother is partly persuaded to allow Lester to be sent to a state hospital.

CASE 3. Howard R., a married man of 28, with cerebrospinal syphilis, is receiving salvarsan treatment. His wife and two children were given the Wassermann test for syphilis in the Out-Patient Department. The children showed a negative re-

action. The reaction of the wife was positive and she was persuaded to put herself under treatment at a general dispensary. The patient's treatment quickly exhausted his small savings, and the Social Service furnished the money for salvarsan until his mother could be persuaded to pay for it. As the patient's illness left the family without support, they were referred to the Overseers of the Poor, and received temporary aid until they were transferred to the care of the Mothers' Aid Department of the State Board of Charity.

GROUP V. CASES IN WHICH HISTORY REQUIRED FOR DIAGNOSIS WAS OBTAINED.

CASE 1. James R. told a story of abuse and unfaithfulness on the part of his wife, claiming that she was a "devil at home" and wanted to get rid of him. When she had him arrested for non-support, he became so excited because he said everybody believed her instead of him, that he made a scene in court, which resulted in his being sent here for observation. He had been once before in an insane hospital, where no definite psychosis was found. At that time he had attacked his wife when drunk. He gave no evidence of a psychosis when here, and was discharged. He went on a cruise, and on his return was immediately sent in by the police. This time an investigation was made by the Social Service. Careful inquiries established the fact that the wife was a good, hard-working young woman, struggling bravely, with the help of her own family, to bring up her children nicely; was in terror of her husband, and had suffered ill-treatment from him. Indications of mental disorder were found in the history, and the patient was committed to an insane hospital. A copy of the social service history was sent with him.

CASE 2. James G. fractured his skull by falling from a scaffolding at his work, and a year later was sent to the Psychopathic Hospital for observation. It was difficult to tell to what extent his dizziness, lack of self-control and slight paralysis of the right arm were induced by the nine dollars a week which he was collecting under the Employer's Liability Act. All data at first pointed toward a diagnosis of psychopathic personality. A careful inquiry later into his character, his general health, and the events preceding and following the accident made it possible to make the diagnosis of traumatic psychosis.

GROUP VI. CASES IN WHICH ARRANGEMENTS WERE MADE IN ORDER THAT THE PATIENT MIGHT BE DISCHARGED.

CASE 1. Caroline O., an old woman, was reported to the overseers of the poor by a neighbor, who found her living alone in a tenement in destitution. The agent thought her manner strangely confused, and called a physician, who sent her here for observation. Inquiries showed that she had deserted her husband when her children were young, and had since lived alone, drinking steadily and consorting with disreputable people. She had resisted all the efforts of her daughter to induce her to live respectably.

After it was determined that she was not suffering from a psychosis, the question was, where was she to go. She was physically weak, and confused and rambling in mind, requiring, the doctors said, hospital care. Her daughter was sent for, and came

with her husband. They had given up the filthy tenement in which the patient had lived, so that she might not return to it. They were not able to afford the expense of a nurse for the patient, and she was too unmanageable to be taken into their home, so that they were advised to send her to the State Infirmary. Her admission was arranged for, and, after a stubborn resistance, the patient was persuaded to go.

CASE 2. James B., 65 years old, came into the hospital in a disoriented condition. A month previous he had been knocked unconscious by an engine while at work. He was a moderate drinker, but had been a steady worker for the railroad twenty-four years. His mind cleared slowly, and by the middle of the second month he was ready to be discharged. Inquiry showed that none of his five children were in a position to give him a home, and all agreed that he ought not to return to his second wife, a chronic alcoholic. Arrangements were, therefore, made to send him to his brother in Nova Scotia. There he spent four months on a farm and gained strength, so that when he came back in the fall, he returned to his work with the railroad. He lives with another brother in the city and reports to the Out-Patient Department.

CASE 3. Harriet L., 19 years old, was brought to the Psychopathic Hospital for observation, at the suggestion of the family physician. She had been in the habit of stealing from members of her family and friends ever since she was a small child, and recently had had immoral relations with several men. Unless she could support herself, her brother was not able to have her live in his family longer; but because of her habit of stealing she could not be recommended to employers.

She was found to be a high grade moron, and institutional care was recommended. An application was sent to a school for the feeble-minded, and the patient's name was put on an already long waiting list. Later, through our representations, she was listed among the "urgent" cases. Meanwhile, it was necessary to keep her under custodial restraint somewhere, and a small private institution finally agreed to take her temporarily, making an exception to their rule not to receive mental defectives.

At the end of three months, however, the matron said that she could not keep the girl any longer. She had plotted to escape with another girl, and her influence in the Home was bad. As no other place could be found, she was sent to the State Infirmary until she could be admitted to the School for the Feeble-Minded. There she took such a violent dislike to the women with whom she was associated that she was given night work, so that she would not have to be with them. At the end of three months she was admitted to the school, where she is said to be mingling well with the older girls, and seems to be happy.

CASE 4. Walter A., an unmarried man, was sent for observation, because the woman with whom he boarded claimed that he had violent fits of temper, when he would destroy clothing and furniture, and because, as he also lacked all ambition and initiative, he had been suspected of mental defect.

Inquiries from neighbors in the country town

where the patient had boarded, showed that he was not considered harmful by neighbors who saw him daily. The landlady was reported to be a woman with whom "an angel from heaven" could not live peacefully. On the wards his conduct was excellent. The nurse in charge reported that he was one of the most willing and obedient patients she had ever had. The diagnosis of dementia precox simplex was made, and the patient was not considered committable.

As the patient's mother had left him some property, in charge of a guardian, board could be paid for him at \$5.00 a week. A place in the country was found in the family of a widow and her daughter, where he could help with the chores, and perhaps obtain some work in the neighborhood. We have received several letters from the patient, telling how much he likes his new home. The family are well satisfied with him and are delighted that they have a permanent boarder.

Original Articles.

AN EXPEDIENT FOR THE RADICAL CURE OF SOME RETROVERSIONS.

BY EDWARD REYNOLDS, M.D., BOSTON.

THE choice of treatment for most retroversions of the uterus has long been settled in favor of operation, rather than the pessary. The majority of the retrodeviations are dependent either on inflammatory complications which can be relieved only by operation, or are the result of minor abnormalities in the supporting mechanism which predispose to retrodisplacement and which will predispose to its recurrence unless they are corrected by operation. The pessary is, as a rule, a palliative rather than a cure, and should be so regarded and described.

Occasionally a recently retroverted uterus, occurring as the result of a fall or during puerperal relaxation, will remain permanently forward after a few months' use of pessaries and their gradual reduction in size during the process of dispensing with them; but these cases are few and belong to a class by themselves. For the rest, the use of pessaries may be judiciously restricted to those cases of uncomplicated retrodisplacements in which it is desirable to postpone an operation for some reason in the circumstances of the patient; and prominent among these are the not infrequent cases of women in the child-bearing period who desire to postpone an operation until after the family is completed. Such women not infrequently endure the annoyance of a pessary for many years except when pregnant, having it reinserted so soon as they are out and about, a few months after childbirth, and wearing it until well advanced in the next pregnancy.

A considerable experience has convinced me that these women form the only class, outside of the very few acute cases mentioned above, in

which retroversion is curable by means of a pessary; and my experience further leads me to believe that most such cases (of uncomplicated retroversion) are so curable. (I am referring only to cases in which the uterus is freely replaceable and in which a properly fitted pessary is worn with comfort.)

In these cases the vagina is usually capacious, the uterus somewhat heavy, and all the tissues relaxed. Labor is usually rapid and the perineal floor either intact or sufficiently good to furnish thorough support for the pessary. Cases in which the pelvic floor is extensively lacerated do not come within the class which I am discussing, and, indeed, are seldom comfortable with a pessary.

The treatment ordinarily adopted in the management of these retroversions is that the pessary is removed before the middle of pregnancy, and is not replaced until the woman again complains of backache and bearing-down sensations, which is usually when the child is from six weeks to three months old. The uterus is then replaced and the pessary reinserted. If such a case is closely observed it will be found that the uterus returns to its retrodisplacement at approximately the end of the third week of the puerperium; it then usually remains heavy and subinvolved until it is replaced and a pessary inserted.

The structures which support the uterus are all muscular—they are all, from a physiological standpoint, uterine adnexae, *i.e.*, they are as much a part of the uterus as an ell is a part of a house. They evolve (increase in size and lose rigidity) with the uterus during pregnancy; they involute (shorten and resume firmness) with the uterus during the puerperium.

These considerations furnish the all-important point. If these structures are allowed to involute during the puerperium, with the uterus held by its own weight and by the intra-abdominal pressures in a retroverted or retroflexed position, they of necessity possess at the end of their involution the degree of length and relaxation which results in an absence of tension, *i.e.*, in a comfortable adjustment of tensions, with the uterus in this abnormal position. They are no longer capable of sustaining the uterus in its proper position. They remain relaxed and subinvolved with the uterus until the organ is replaced and raised by a pessary. A universal experience has shown that they do not then undergo sufficient resumption of activity to enable them to perform their supporting functions effectively.

All that is necessary to secure effective puerperal involution of the supporting structures, and a cure of the retroversion, is so to arrange the puerperium that the supporting structures undergo involution, and complete involution, while the uterus is held in an extreme forward position. Under these circumstances the supporting structures will almost invariably shorten

and resume firmness to a degree which will hold the uterus permanently in a normal position.

At a period in the puerperium at which the uterus is too large to be capable of retroverting, *i.e.*, between the tenth and fifteenth day of the puerperium, the uterus should be thrown into strong anteversion bimanually, and a carefully fitted, hard rubber pessary should be made to hold it there. Such a pessary will usually be larger than the stock sizes and must often be specially procured. Very hot vaginal douches should then be administered twice daily. From two to four quarts should be used, and the injection should last from fifteen to twenty minutes. It should be given with a fountain syringe and under a fall of not more than twelve to fifteen inches in order to avoid forcing fluid through the open os.

In this position of the uterus and under the influence of the hot douches involution is usually very rapid. In most cases it will be found that within a week the original pessary will have become too large and too highly curved for the contracting vagina. A second and smaller, but equally well fitting, pessary should then be adjusted, and the douches continued. This will usually need to be replaced by one of lesser size in from ten days to a fortnight, and after a few weeks this must again be reduced. The hot douches should be continued until the uterus is but little above the normal size and firmness, but should then be intermitted, as too long a continuance of the douches sometimes results in hyperinvolution, which might cause subsequent dysmenorrhœa.

Uncomplicated retroversion is not a serious lesion, but it is not so innocuous as some general surgeons would have us believe. Women with retroverted uteri are always more liable to inflammatory attacks from slight exposures than those with normally placed organs. The majority of them have backaches and uncomfortable catamenia; most of them, sooner or later, seek relief. Unnecessary operating is objectionable. The prolonged use of a pessary is dangerous if the instrument is not frequently cleaned and repolished—more dangerous than most practitioners realize. If it is properly cared for it is in many minor ways more objectionable than any one but the patients realize. The prolonged use of a pessary is a worse thing than an operation in the majority of cases. It is tolerable only when an operation is, for some reason, inadvisable.

The relief of the class of multiparae which I have attempted to define by the simple means described has been with me so nearly uniformly successful that I am surprised that the method has not attracted general attention. As I have never seen it published, I am led to put it on record as worthy of wider use, but with the caution that the use of large pessaries during the early part of the puerperium demand special care and probably a reasonable degree of special

skill, to say nothing of asepsis. I have never seen harm result, but am so far sure that carelessness might easily result in trauma, that I would not recommend the procedure, valuable as I believe it to be, to practitioners who are not in the habit of using pessaries, nor familiar with the process of fitting them to the individual case.

ETHER ANESTHESIA.

By H. H. AMSDEN, M.D., CONCORD, N. H.,

Visiting Physician, Margaret Pillsbury General Hospital.

WHILE intraspinal, intravenous, rectal and gas-oxygen anesthesia are indicated in selected cases and in skilled hands, yet ether by inhalation remains the safest, simplest, and most economical anesthetic for general surgical purposes. Gas-oxygen is, doubtless, the ideal general anesthetic, if administered by an expert, but otherwise it is not as safe as ether, and the cost prohibits its use in all but a small number of cases.

The researches of Boothby, Henderson, Bryant, Hewitt and others have apparently established two facts regarding the physiology of anesthesia: (1) A definite ether percentage is necessary, below which it is impossible to maintain anesthesia, and above which there is danger of overdosage. Boothby has experimentally established these limits as from 15% to 30%. (2) A certain amount of re-breathing is desirable, as loss of CO₂ is thereby prevented; this is claimed to be an element in the causation of shock.

The best method is the one which permits the giving of a concentrated ether vapor, in such manner as to prevent excessive CO₂ loss, or, in other words, a closed rather than an open ether; yet the open drop method is, doubtless, used more extensively than any other today, in this country at least. An ideal ether would call for the following points: (1) Safety; this factor largely depends upon the anesthetist, more than upon the method or apparatus used. It is necessary to watch the patient's color, pupillary reflex, depth and rate of respiration, and pulse, and unless the anesthetist is fully aware all the time of the patient's condition in these respects, the factor of safety is not provided for. (2) Simplicity; while ether apparatus doubtless facilitates its administration, it is not available for general use, in private practice, or in small hospitals. (3) Economy; other things being equal, the method which uses the least ether is most desirable. (4) Comfort; absence of choking, coughing, initial vomiting, or struggling, minimum secretion of mucus, and minimum amount of post-anesthetic nausea.

A preliminary hypodermic of morphine and atropine should be given to adults, and atropine by mouth to children. The Allis or similar open

cone is used for preliminary anesthesia. The cone is placed over the patient's face, and he is allowed to breathe for a minute or two before the anesthetic is started. A few drops of alcohol, menthol solution, or some mild perfume is then dropped on the cone, followed by a few drops of ether. The gradual administration of ether by the drop method is essential for a smooth initial anesthesia; under no circumstances should enough be given to cause coughing. As the stage of excitement is reached and the respirations become deeper and more rapid, it is necessary to give a higher percentage, and this can be done by putting on more ether and by covering the cone with the hand or with a folded towel. It is essential to obtain full surgical anesthesia before discarding the cone, as the patient cannot easily be carried by the stage of excitement and deep breathing, unless the cone used permits the giving of a closed ether. It is very difficult to obtain a sufficient ether percentage under these circumstances with any mask or device which does not permit complete exclusion of air if desired, as only in this way can the necessary percentage be obtained. After full surgical anesthesia is secured, the cone is replaced by a sponge consisting of six or eight layers of coarse mesh gauze laid directly over the nose, which has previously been smeared with vaseline. The chin is held up with one hand, thus closing the mouth, so that respiration is wholly nasal. The ether is dropped on the sponge directly over the nostrils. The practical results of this method are a smooth ether, with minimum secretion of mucus; the patient's color is pink, and anesthetic equilibrium, so to speak, can be maintained, so that, while the patient can be held always under surgical anesthesia, yet the anesthesia is so light that there is no danger of overdosage.

This primitive method of etherization seemingly contradicts the statement that a closed, rather than an open, ether is desirable. The advantages of the closed method are high ether percentage, and re-breathing. When we study more closely what really happens with the method described, it is evident that it is possible to secure a high percentage in this way; the ether is dropped directly over the nostrils and inspired immediately, and if the dropping is timed to coincide with inspiration, very little ether is lost by evaporation. As regards re-breathing, it is apparent that if respiration be wholly nasal and a moist sponge be laid directly over the nose, expiration is sufficiently obstructed to secure a certain amount of re-breathing.

The most important detail in this method, however, is its use of the nose as the sole route of inspiration. The physiology of the nasal mucous membrane has apparently not been sufficiently considered, in its relation to anesthesia, namely, its function of warming and moistening inspired air. If nasal respiration is physiologically proper, then it would follow that the

nasal route is the proper one for anesthesia. It is claimed that warm ether vapor is preferable, because it is less irritating to mucous membranes, and because the loss of body heat which is expended in warming the ether vapor is detrimental. Leaving out of the question the possibility of warming ether vapor, which is denied by some authorities, it may be said that the heat loss entailed is negligible, and that if the nasal route is adopted and the functions of the nasal mucous membrane utilized, warming the vapor is totally unnecessary. Another noticeable feature with this method is the small amount of mucus secreted. Ether vapor is irritating to mucous membranes, and if inspired directly through the mouth, a copious secretion of mucus occurs, whose presence in mouth and throat is very annoying and may be dangerous. It is probable that the presence of a large amount of ether-laden mucus in the stomach is partly responsible for post-anesthetic nausea and vomiting. If the nasal route is adopted, the secretion of mucus is much diminished.

The adoption of this method presupposes free nasal passages, and the presence of polypi or adenoids may render its use impossible. In some cases in which the nose is clear it will be found that the alae nasi collapse on inspiration, preventing free ingress of air. Some device to hold the nose open may be necessary, and a simple one is three medium size safety pins, two of which are inserted in the nostrils, while the third, lying across the columella, holds the others in place.

The results of this method as used in some 300 cases, show that it conforms very closely to the standard set for an ideal ether, namely, safety, simplicity, economy and comfort.

Book Reviews.

The International Medical Annual. A Year Book of Treatment and Practitioner's Index. New York: William Wood & Company. 1915.

The English edition of this standard British Year Book for 1915 was reviewed in the issue of the JOURNAL for October 28 of that year (Vol. CLXXIII, p. 672). This American edition for 1916, being the thirty-fourth annual issue, is this year more punctually published. It is notable for the large amount of space devoted to naval and military surgery, to which a special section is given at the end of the dictionary of new treatment. Special injuries to organs and nerves are considered under their proper headings in the body of the work. Other branches of medical study are not neglected. The most notable changes in the list of contributors this

year are the absence of the late Sir Charles Bent Ball, who for eight years was a collaborator in the production of the Annual, and the addition of the names of Dr. Lewis A. Conner and Dr. J. Ramsey Hunt of New York, who have assumed charge respectively of the sections on pulmonary diseases and diseases of the nervous system. The volume is illustrated with fifty-three full-page plates and sixty-four text cuts, a considerable reduction from the number in the previous volume. The number of reading pages, however, remains the same. The volume maintains its standard of value and has new and unusual features of interest.

The Practical Medicine Series. Comprising ten volumes on the year's progress in Medicine and Surgery. Under the general editorial charge of CHARLES L. MIX, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume V. *Pediatrics*. Edited by ISAAC A. ABT, M.D., Professor of Pediatrics, Northwestern University Medical School, Attending Physician Michael Reese Hospital. With the collaboration of A. LEVINSON, M.D. *Orthopedic Surgery*. Edited by JOHN RIDLON, A.M., M.D., Professor of Orthopedic Surgery, Northwestern University Medical School. With the collaboration of CHARLES A. PARKER, M.D. Series 1916. Chicago: The Year Book Publishers. pp. 232. 1916.

This little book, which is one of a series of ten, published annually and devoted to the progress of the year in medicine and surgery, is made up of abstracts from periodical literature with editorial comments. The articles chosen for review are on the whole well selected and fairly representative of the thought of the year in pediatrics and orthopedic surgery. The editorial comments in the section on pediatrics are good. Those in the section on orthopedic surgery seem to the reviewer to show considerable personal bias and to be more caustic than necessary.

Gynecology. By WILLIAM P. GRAVES, M.D., F.A.C.S., Professor of Gynecology at Harvard Medical School. Octavo volume of 770 pages with 424 original illustrations, 66 of them in colors. Philadelphia and London: W. B. Saunders Company. 1916.

This latest work on Gynecology is based on the wide experience of the author in the pathological laboratory, clinic, operating room and class room. It is designed both as a textbook and as a general reference book of gynecology,

in one volume. Thus, from the start it was composed under a serious handicap which the division into three parts cannot overcome.

The first part deals with the physiology of the pelvic organs and with the relation of diseased pelvic organs to other parts of the body. It is the most valuable section of the book and Graves has rendered a distinct service to American students in emphasizing the point of view and stating the facts so familiar to German investigators. Space did not permit more than this too brief yet suggestive treatment of the subject, and the literature, to which especial reference is here made, should be far better known.

The second section is "designed primarily for the undergraduate student who is taking his initial course in gynecology." Whether the needs of the third year students in our best medical schools, for whom presumably the book is written, are best met by so "compact" a presentation is at least questionable. Many high educational authorities advocate more detailed and comprehensive studies for university men.

"The third part is devoted exclusively to the technic of gynecologic surgery" and also shows the defect of too great "compactness."

The style is direct, clear and pleasing, so that one reads easily page after page without being disturbed by the grammatical and rhetorical infelicities so common in current American medical literature. The book is thoroughly up to date and does not contain the vast amount of discarded material one finds in even recent editions of some older works. Perhaps too much has been rejected, but the book is a refreshing departure in this respect, and actually contains considerable information not easily accessible elsewhere. More detailed references to the literature, however, would give great enhancement of value. The illustrations are, in general, excellent, many of them by the author himself. But the propriety of so many representations of microscopic sections in a work of this character is doubtful. While some are characteristic and helpful, others might be dispensed with easily.

Oral Abscesses. By KURT H. THOMA, D.M.D.
Boston: Ritter and Company. 1916.

The recognition of the importance of infections associated with the teeth as modes of entry for systemic diseases, and as reservoirs of infection from which repeated metastatic distribution may occur throughout the body, is relatively recent, and has resulted in the rapid development of a new and large technical field in dentistry. At the same time it has resulted in a much closer coordination between dentistry and medicine and should do much to break down the unnatural demarcation hitherto existing between the two. Not only is knowledge of general medical diseases essential to the den-

tist, but equally essential to the physician is an understanding of the phenomena of dental infection and its relation to the somatic diseases which it is his part to treat.

The present volume, by an author hitherto well known for his work in oral anesthesia, aims to supply a book which shall furnish, both to the dentist and to the general practitioner, the necessary information for their mutual instruction in the nature and progress of dental infections, their relation to the general health and their treatment. It is divided into a series of twelve chapters dealing systematically with successive aspects of the subject and abundantly illustrated with 293 figures presented on seventy-nine full-page plates, of which a number are colored. There is an excellent terminal alphabetic bibliography of about 100 titles on the subject. The book is well and clearly printed, and is highly commended to both dentists and physicians.

Practical Bacteriology, Blood Work and Animal Parasitology. By E. R. STILL, A.B., PH.G., M.D. Fourth Edition Revised and Enlarged. Philadelphia: P. Blakiston's Son and Company. 1916.

This fourth edition of a well-known laboratory manual, originally based on the author's experience as a member of the United States Naval Examining Board, aims to incorporate a large amount of new material without materially increasing the size of the book. This has been accomplished by a greater use of paragraphs on minor subjects in small type. A further economy of space is effected by printing tables and other material on the inside of the covers and on the fly leaves. In spite of all these economies, the volume is increased nearly one hundred pages over the preceding edition. Every chapter in the book has been carefully revised and in many instances, rewritten. A new chapter has been added on diseases of doubtful or recently determined etiology, such as beri-beri, pellagra, oryza fever, veruga Peruviana, Rocky Mountain spotted fever and sprue. In the appendix a new section has been added on clinical blood examination and a section on anatomic and physiologic norms. Many new tests are, for the first time, incorporated in this edition, such as the Schick and colloidal gold tests. The volume is conveniently divided into four parts, dealing respectively with bacteriology, study of the blood, animal parasitology and the clinical examination of the various body fluids and organs. An appendix contains bacteriological keys, zoölogic tables and explanatory clinical notes. The book is illustrated with four plates and 115 other cuts, containing 505 figures. It should maintain its value as a comprehensive laboratory text-book and manual.

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THE DOTEN BILL.

ON page 840 of this issue of the JOURNAL appears the full text of the Doten Bill, House No. 1015. The importance of this bill is so great that everyone should become familiar with its major points. The measure, if it becomes a law, and if it has the effect in this country which it has had in Great Britain and in Germany, should increase materially the health of the industrial class through providing earlier medical care and through the reforms in industrial sanitation which will be brought about.

The effect of health insurance upon the practice of medicine is less easy to predict. That it will inaugurate changes of great significance seems highly probable and for that reason, if for no other, every physician in this state should read carefully the full text of the bill. Briefly stated, the system of insurance as outlined by the bill is as follows:

The state is divided into districts in which local health organizations, or organizations comprised of workers in certain trades, are formed. In one of these associations every person employed for compensation not greater than one hundred dollars a month must be enrolled. Certain persons, such as federal employees and those already provided for, are exempted. Certain other workers who are not employed at a regular wage, such as those working at home, may enroll if they wish.

These local associations or "carriers" are supported by contributions from employees, employers and the state. Of the two former, each pays two-fifths; the state, one-fifth. In the case of employees earning nine dollars a week, or less, the proportion paid by the employee becomes less as his wage diminishes. In the case of those earning only five dollars a week the employer pays the entire four-fifths.

In return for this expenditure, the employee gets medical, surgical and nursing care, treatment in a hospital if needed, sanatorium treatment for tuberculosis and a cash benefit for the support of his family while he is unable to work. The cash benefit is given for as long as 26 weeks and amounts to two-thirds of the man's wages if he is at home, or one-third if he is in a hospital. Women get obstetrical care, and perhaps may receive cash benefits during confinement.

The administration of the whole matter is in the hands of three commissioners who are full time, salaried officials. To advise with these there is a council, called the Social Insurance Council, composed of twelve members, six representatives of employers and six of employees. This council meets at least four times a year. Each local health or local trade health association is governed by a committee of from twenty to two hundred members and by a board of directors of eight to eighteen members elected by the committee. Employers and employees are equally represented upon these boards.

As to the manner in which medical service is to be rendered, the bill is very nearly silent.

Part II, Section 3, states that all necessary medical, surgical and nursing attendance and treatment shall be furnished by the carrier. "In case the carrier is unable to furnish the benefit provided for in this section, it must pay the cost of such service actually rendered by competent persons at a rate approved by the commission."

Part II, Section 4, states that "the carriers, subject to the approval of the commission, shall make organized provision for medical, surgical and nursing aid by duly qualified physicians, surgeons and nurses, or through institutions or associations of physicians, surgeons and nurses as required by this act."

Part II, Section 6, "Hospital or sanatorium treatment and maintenance may be furnished instead of all other benefits. . . This benefit may be provided in those hospitals with which the associations and societies have made satisfactory financial arrangements which have met the approval of the commission or in hospitals erected and maintained by the associations and societies with the approval of the commission."

The board of directors of the local associations shall have the power to "make contracts with physicians, hospitals, pharmacists and any other persons necessary for the business of the association." It seems, therefore, that the relation of the association to the physician is left to the discretion of the board of directors of each association, subject to the approval of the Social Insurance Commission. Probably these relations will vary in different localities. In smaller communities all the local practitioners may serve on the panel of the association, whereas in larger communities, particularly those given over to well-organized industries, the insurance associations may have their own staff of physicians and even their own hospitals.

The question of choice of physicians by the sick is not mentioned in the bill. Doubtless it was felt by the authors of the bill that the powers given to representatives of employees would be sufficient to insure conditions satisfactory to the insured. The situation thereby differs from that now obtaining in regard to the Workmen's Compensation Act, in the machinery of which employees have only the very remotest authority. The effect of the Doten Bill upon the medical profession is impossible to foresee. In England, in spite of the fact that the insurance system embodies some unsatisfactory features which the Doten Bill will avoid, the sum set aside annually for the remuneration of physicians is nearly twice the average physician's income before the insurance went into force.

From the point of view of the practitioner, health insurance, so far as it tends to cut down the number of patients now receiving charity treatment, is excellent and a just measure. The

profession, however, must be united in insisting upon fair remuneration for services rendered. The doctor will no longer be independent, but will be responsible to the association which employs him, and this responsibility should check the tendency, inherent in all contract practice, to perform one's work in a machine-like and superficial manner. He can look to the association for payment for his services, and in these ways the financial side of medical practice should be on a more business-like basis.

Once more we beg all physicians to consider this bill most carefully and, with unprejudiced mind, answer these two questions: Will health insurance improve the public health? Will it improve the condition of those who have invested so much time and money in order to acquire the equipment necessary for the practice of medicine?

RETROVERSION AND PTOSIS.

IN another column of this issue of the JOURNAL we publish a valuable article by Dr. Edward Reynolds of Boston, pointing out the possibility of successful treatment and radical cure of certain cases of uterine retroversion without surgical operation. With this article we wish to take a single exception, and that is to its first sentence. Though it is doubtless true that a majority of surgeons treat the majority of retroversions by surgical operation, rather than with the pessary, we believe it is far from being settled that this preference is judicious, sound and necessary.

As a matter of fact, the majority of uterine retroversions are really but one of the many manifestations of visceral ptosis. The failure of many men successfully to correct retroversion by the use of the pessary, and the consequent disrepute into which that valuable appliance has fallen, are due largely to the non-recognition of this fact and the consequent failure to employ the other necessary mechanical means for the correction of the associated ptosis. It is manifestly often difficult and frequently impossible with a pessary to sustain permanently the retroverted uterus in the face of superincumbent enteroptosis. Not until the prolapsed intestines are raised and held by a properly applied corset, can the uterus, whose retroversion, in the absence of adhesions, is usually maintained solely by their weight, be

restored and held in its own normal position. Moreover, not infrequently the mere correction of enteroptosis by proper corseting is alone sufficient to make the retroverted uterus rise of its own accord into normal position, without further manipulation or apparatus. The pessary is not to be regarded, therefore, as a permanent appliance, but as a temporary splint to be used merely until the retraction of stretched ligaments insures the permanent maintenance of normal position. Without the simultaneous correction of intestinal ptosis, the use of the pessary either is unavailing or must be permanently maintained; with the correction of such ptosis, the pessary can usually be dispensed with permanently within a few months. The employment of the douche, as Dr. Reynolds points out, is a valuable adjuvant to this method of treatment since it assists the depletion of engorged pelvic tissues and expedites the involution of uterus and ligaments.

It is doubtless true that in nulliparae the correction of retroversion by this method is much more difficult than in parous women. Oftentimes a preliminary period of treatment with douches and the correction of abdominal ptosis by a corset should be followed in these cases by manual replacement of the uterus and insertion of a suitable pessary under ether, following which the pessary may generally be removed at the end of a few months without the recurrence of the retroversion, provided the use of the corset and douche has been faithfully continued. With patience and perseverance nearly as large a percentage of results may be obtained in these cases as in those of parous women. In the latter class of cases, the use of douches and suitable corsets should be begun at the end of the second week of the puerperium, provided retroversion then exists and there is no septic or other complication. It is our firm belief that by the intelligent and correct employment of this method, which rests, as we have said, upon recognition of the fact that the majority of uterine retroversions are really a manifestation of visceral ptosis, a majority of such cases may be radically and mechanically cured, leaving the employment of surgical operative procedures for the relatively limited minority of cases in which the uterine retroversion is caused, complicated or maintained by pelvic inflammatory process, neoplasm, or adhesions.

STANDARDIZATION OF FIRST-AID METHODS.

AMONG the various activities and endeavors inspired by the theory of national preparedness, that of the spreading of first-aid knowledge among laymen deserves high commendation. Dr. Joseph C. Bloodgood of Baltimore first brought forward the idea of a standardization of first-aid methods, reducing such procedures to simple terms, teaching them to laymen and thereby saving, by prompt action, lives and health otherwise lost and endangered by inability on the part of laymen to meet emergencies. Through his efforts the American First-Aid Conference was held in Washington on August 24, 1915. For several sessions the assembled doctors debated the problem of preventive surgery from the layman's point of view and planned an organization which was effected before they adjourned. This first organization, under the presidency of Dr. William C. Gorgas, surgeon-general of the army, had no money and its labors were all voluntary. It was suggested that President Wilson appoint a board who might be empowered to carry on the work of such an organization. This the President did, calling the new board the Board on Standardization of First-Aid Methods and naming Dr. Richard H. Harte of Philadelphia chairman. The vice-chairman is Colonel Louis LaGarde of the Marine Corps, and Dr. W. C. Rucker, assistant surgeon-general of the United States Public Health Service is secretary. The other members consist of Dr. J. P. Kaster, chief surgeon of the Atchison, Topeka and Santa Fé Railroad; Dr. Samuel C. Plummer, an authority on fractures, and Dr. Shelton Horsley on emergency surgery. Major R. U. Patterson of the Marine Corps is well known through his position with the American Red Cross, and Surgeon A. M. Fauntleroy will be remembered for his striking and useful work on the "Medical Aspects of the European War."

"One of the first steps necessary to the work of the new board was to get funds with which to proceed. Chairman Fitzgerald of the Committee on Appropriations, thought well of the idea and the board was given \$2,000, although, curiously enough, it was placed under the nominal control of the Bureau of Labor Statistics of the Department of Labor. Dr. Royal E. Meeker, chief of the Bureau of Labor Statistics, welcomed this new child to his fold, but he readily recognized that the task ahead of the board was one for specialists, and, although the law re-

quires that the board shall act in collaboration with his bureau, Dr. Meeker has been wise enough to give it as free a hand as if it were an independent organization.

"The board is now engaged in collecting expert opinions from a selected group of 5,000 of the best surgeons in the United States, which will enable it to place first aid on a uniform standard basis. A questionnaire covering the main points on which the board desires information has been sent out recently, and already Secretary Rucker is flooded with letters expressing the most cordial endorsement of the standardization idea and promising hearty coöperation. This ready response is really a matter of patriotic self-sacrifice on the part of the surgeons to whom appeal has been made, for each of them will need to give much time and thought to the 61 answers which he has been requested to make. Every sheet of the questionnaire bears at the top the legend: 'Please answer all questions from the viewpoint of what is best in the hands of the layman.' In other words, the board wants to know, not what the surgeon would do in case of accident, but what the injured man or those about him could and should do.

"The work of the Board on Standardization of First-Aid Methods necessarily is twofold. The surgeons who compose the board must first collect and collate the information they receive, and devise their system in accordance with their conclusions, and then they must get this knowledge out to the people. It is the dream of Secretary Rucker that in time a first-aid package, with instructions how to use it, shall have a place in every home in the land. Such a consummation will cost money, and this money must be provided, much of it by the Government, some of it, possibly, through the sale of first-aid kits—although in this connection it might be said that if the Government can afford several hundred thousand dollars a year with which to supply voters with garden seeds it would be equally warranted in sending out first-aid packages. In fact, it is believed that as soon as congressmen appreciate the practical utility of this great scheme for conserving human life they will find a way of their own to pass its benefits around in their districts. The paltry \$2,000 with which the board starts is only a drop in the bucket to what will be needed, but the plan would appear certain to receive enthusiastic popular and congressional support as soon as its features become known."

MEDICAL NOTES.

ERADICATION OF HOOKWORM IN BRAZIL.—Report from San Paulo, Brazil, on November 18, states that the health officers of Rio de Janeiro have announced their acceptance of the offer of the International Health Board of the Rockefeller Foundation to coöperate with the Brazilian government for the eradication of the hookworm in that country. Dr. Lewis Wendell Hackett of the Harvard Medical School has been sent by the Rockefeller Foundation from New York to San Paulo to take charge of the work. The hookworm is extensively endemic among laborers on the coffee plantations in San Paulo, where three-quarters of the Brazilian coffee crop and nearly one-half of that of the entire world is grown. The parasites breed most extensively in the wet, shady soil of the tropical climate. The economic loss to planters due to lack of efficiency on the part of laborers infected with hookworm disease is very great. The anemia of many of these workmen is so profound that they are unable to work more than three or four hours a day. In Porto Rico, where the hookworm has been virtually exterminated by the United States Government, not only has there been a marked reduction of the death rate but the labor output has been enormously increased and the cost of production correspondingly diminished. Instead of thymol it is planned in Brazil to employ the oil of chenopodium in the treatment of the disease. Chenopodium grows as a common roadside weed in eastern United States, but the principal source of production of the drug is in the islands of Java and Sumatra and in the Levant.

TYPHUS FEVER IN MEXICO.—During the week ended October 21, 1916, 334 cases of typhus fever were reported in the federal district of Mexico, including Mexico City.

PREVALENCE OF DISEASE IN VIRGINIA.—The weekly report of the United States Public Health Service for November 17, 1916, states that during the month of September there were reported in Virginia 16 cases of cerebro-spinal meningitis, 2118 of malaria, 28 of pellagra, 64 of poliomyelitis, 8 of smallpox and 756 of typhoid fever.

AWARD OF VON GRAEFE PRIZE.—It is announced that the German Ophthalmological Society has divided between Dr. Lindner of Vienna and Dr. Ohm of Bottrop the von Graefe prize for the best article published in 1911 to 1913 in the *Archiv für Ophthalmologie*. These articles were respectively on "Miner's Nystagmus" and on "Trachoma and Inclusion Blepharorrhea."

RETURN OF AMERICAN PHYSICIAN.—Dr. Charles A. Powers of Denver, Colorado, has

recently returned to the United States after a service of six months at the American Ambulance Hospital at Paris.

EUROPEAN WAR NOTES.

WAR RELIEF FUNDS.—On Dec. 2 the totals of the principal New England relief funds for the European War reached the following amounts:

French Wounded Fund	\$161,540.38
Armenian Fund	107,227.95
Serbian Fund	105,291.30
Surgical Dressings Fund	58,794.66
Polish Fund	49,531.33
Permanent Blind Fund	37,108.11
Italian Fund	27,873.54
German Widows' Fund	25,000.00
LaFayette Fund	21,002.53
Russian Refugees' Fund	5,667.17
Wittenberg Prisoners' Fund ..	1,889.15

BOSTON AND NEW ENGLAND.

WEEK'S DEATH RATE IN BOSTON.—During the week ending Saturday noon, December 2, 1916, the number of deaths reported was 232, against 243 for the same period last year, with a rate of 15.90, against 16.93 last year. There were 32 deaths under one year of age, against 31 last year, and 81 deaths over 60 years of age, against 90 last year.

The number of cases of principal reportable diseases were: diphtheria, 40; scarlet fever, 24; measles, 16; whooping cough, 3; typhoid fever, 2; tuberculosis, 40.

Included in the above were the following cases of non-residents: diphtheria, 10; scarlet fever, 6; tuberculosis, 6.

Total deaths from these diseases were: diphtheria, 3; typhoid fever, 1; tuberculosis, 13.

Included in the above were the following deaths of non-residents: diphtheria, 3.

AN INGENIOUS EVASION OF THE NARCOTIC DRUG LAW.—The Collector of Internal Revenue at Boston has received reports of several cases where drug addicts have called on druggists and pretended to be internal revenue inspectors. In these cases, the person calling would ask to be allowed to examine the records of the druggist and his stock of narcotics, and while pretending to make the examination would secrete and carry away whatever morphine, cocaine, etc., was available. This has resulted in small amounts of drugs coming unlawfully into the possession of drug addicts and disarranging the records which dealers are required to keep.

Such frauds are entirely unnecessary, because the internal revenue inspectors authorized to examine druggists' records are all furnished with credentials in the form of pocket commissions signed by the Commissioner of Internal Revenue, William H. Osborn, by Deputy-

Commissioner David A. Gates, or by Collector of Internal Revenue John F. Malley.

Druggists should not allow anyone to inspect their stock of narcotic drugs, unless satisfied of the authority of the inspector. In the case of internal revenue drug inspectors, the druggist should ask to see the officer's credential card, in order to avoid impersonation and fraud.

THE CAMBRIDGE HOSPITAL NEEDS.—The Trustees of the Cambridge (Mass.) Hospital have recently issued the following appeal for funds describing the work of the Hospital and its needs for the future continuation of its service:

"For thirty years the Cambridge Hospital has been ministering to the needs of the citizens of Cambridge and until now has never made a general appeal for funds to increase its plant and, therefore, its usefulness. The trustees have been fully alive to their responsibilities, however, and additions have been made as funds have from time to time been available from legacies.

"Through a legacy of Mrs. Scollard, in 1913, a large addition was built and the number of beds in the hospital was doubled. A maternity ward also was added.

"These increased facilities have enabled the hospital to care for a much larger number of patients than heretofore, the number for 1915 being one-third larger than that in 1914, and consequently more nurses are required to take care of the patients. The accommodations of the nurses' home are entirely inadequate and the hospital must in some way provide accommodations for these additional nurses.

"An out-patients' building, where preventive and social service work can be done properly, is especially desired. This department is now located in the basement of the nurses' home—the only place which has been available. During 1915 there were nearly 8000 calls for treatment, and satisfactory work cannot be done in such quarters. There is needed \$30,000 for the addition to the nurses' home, \$20,000 for the out-patients' building and \$50,000 for endowment to offset increase in running expenses. Income from our present endowment from patients and donations left a deficit of \$12,376 in 1915.

"One hundred thousand dollars, therefore, are imperatively needed to enable the trustees of the hospital to take care of the increasing demand for its facilities and maintain its high standard of service. Will you not help us either by a gift now, or distributed over two to five years? The sum of \$58,000 has been paid or promised to date from 200 persons and the trustees have broken ground for an out-patient building, hoping to have sufficient funds by spring to provide for an improved nurses' home.

"Checks may be sent to James L. Paine, treasurer, Cambridge Hospital Building Fund, 9 Waterhouse Street, Cambridge."

HOSPITAL BEQUESTS.—The will of the late Fannie Channing of Milton, Mass., which was filed for probate at Dedham, Mass., on November 27, contains bequests of \$5000 each to the Boston Floating Hospital and the Nursery for Blind Babies, \$2000 each to the Channing Home and the Perkins Institute for the Blind, and \$500 to the Milton Convalescent Home.

POLIOMYELITIS IN MASSACHUSETTS.—During the month of November, 179 cases of poliomyelitis were reported in Massachusetts, making a total of 1892 since Jan. 1. Four cases were reported in the first two days of December.

Obituary.

JOHN BENJAMIN MURPHY, M.D.

DR. JOHN BENJAMIN MURPHY, who died of heart disease in Chicago on August 11, 1916, was born at Appleton, Wis., on December 21, 1857. After graduating from the University of Illinois, he received the degree of M.D., in 1879, from the Rush Medical College, Chicago. After practicing his profession for a few years, he pursued his medical studies further in Germany, returning to Chicago in 1884, where he rapidly gained a reputation as a brilliant and ingenious surgeon. It was perhaps his invention of the intestinal button known by his name which, in 1892, first brought him into international prominence. In 1893 he reported to the New York Academy of Medicine his first series of twenty-two cases of cholecystenterostomy for non-malignant disease.

In 1895 Dr. Murphy was appointed professor of clinical surgery at the Chicago Post-Graduate School, and later became chief of the department of surgery in Northwestern University Medical School. He was for many years chief surgeon to the Mercy Hospital, Chicago. In 1898, independently of Forlanini, he suggested the treatment of unilateral disease of the lungs by artificial pneumothorax induced by the injection of nitrogen into the pleural cavity. His name is also associated with the postural treatment of peritonitis, the use of rectal seepage, arterial anastomosis and the extra-articular wiring of fractures of the olecranon. He was highly successful in cartilage and bone grafting and devised an operation for the lysis of ankylosed joints by the interposition of a flap of fascia between the free surfaces of the bone ends.

Dr. Murphy was a member of many medical societies and the recipient of numerous honors. He received the honorary degree of LL.D. from the University of Illinois in 1905, and that of M.Sc. from the University of Sheffield, England, in 1908. He was a fellow of the American College of Surgeons, of the American Surgical Association

and of the Royal College of Surgeons of England. He was a member of the Deutsche Gesellschaft für Chirurgie and of the Société de Chirurgie de Paris. In 1913 he was president of the American Medical Association and of the Clinical Congress of Surgeons of North America.

In 1915 he went to Europe in charge of an American hospital unit serving with the British Army Medical Corps in France. In 1916 he received, from Pope Benedict, knighthood in the Order of St. Gregory the Great. During the last four years of his life he issued the "Surgical Clinics" representing his work at the Mercy Hospital, which have been regularly reviewed in the JOURNAL. Dr. Murphy is survived by his widow.

Dr. Samuel J. Mixer of Boston, at the time of Dr. Murphy's death, gave the following personal estimate of his work and character.

"The death of Dr. John B. Murphy of Chicago, means a great loss to the surgical profession and to the world at large. Possessing an original and active mind, combined with great industry and mechanical and manual dexterity, he has added much to our surgical knowledge and given us new methods of fighting disease and suffering.

"As a writer he was prolific and convincing; as a speaker incisive and enthusiastic. A prominent figure at the meetings of the leading surgical societies, his papers were always listened to with interest and his remarks about the various matters under discussion were pointed and forceful.

"He was an enthusiastic sportsman and thoroughly enjoyed meeting his many friends the world over. He will be mourned and greatly missed."

Soon after Dr. Murphy's death there was incorporated in Illinois, the John B. Murphy Memorial Association, consisting of Drs. William A. Evans, James E. Keefe, Allan B. Kanaavel, Frank H. Martin and Frank Crozier. It is the purpose of this Association to raise the sum of \$500,000 as a permanent memorial to Dr. Murphy for the scientific and ethical advancement of surgery.

Miscellany.

THE DOTEN BILL (HOUSE NO. 1015).

An act to establish a System of Insurance to provide Benefits for Employees in Case of Death, Sickness and Accident.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same as follows:

PART I.

DEFINITIONS AND PERSONS INSURED.—SECTION 1. Recognizing that it is necessary to provide proper care for employees during sickness and pecuniary

support for themselves and their families during periods of inability to work on account of sickness in order to prevent the spread of disease and to protect the health of the subjects of the commonwealth, and recognizing the part which modern industrial and social conditions have in causing sickness among wage-earners, the general court judges compulsory insurance against sickness to be for the good and welfare of this commonwealth and of the subjects of the same.

Definitions.—SECTION 2. When used in this act:—

"Commission" means the social insurance commission.

"Association" means a local health or local trade health association, as the case may be.

"Society" means an approved society.

"Carrier" means the society or association which carries the insurance.

"Insurance" means health insurance under this act.

"Disability" means inability to pursue the usual gainful occupation.

"Employer" means a person, partnership, association, corporation, the legal representatives of a deceased employer, or the receiver or trustee of a person, partnership, association or corporation and the state or a municipal corporation or other political division thereof.

"Home-workers" are persons to whom articles or materials are given out to be made up, cleaned, altered, ornamented, finished or repaired, or adapted for sale, in the worker's own home, or on premises not under the control or management of the employer.

"Wages" and "earnings" shall include actual expenditures for or reasonable value of board, rent, housing and similar advantages given employees by the employer and gratuities received in the course of the employment from others than the employer and both these advantages and gratuities shall be added to the actual expenditure of the employer for wages for the purpose of computing his payments under section four of Part III. of this act.

Compulsory Insurance.—SECTION 3. Every person employed in the commonwealth for compensation not in excess of one hundred dollars a month, unless exempted under section four of this act, shall be insured in an association or society as provided in this act.

Persons Exempted.—SECTION 4. The following persons shall be exempt from the provisions of this act: Employees of the United States.

Employees of the commonwealth or of municipalities for whom provision in time of sickness is already made through legally authorized means which in the opinion of the commission is satisfactory.

Inmates of charitable or reformatory institutions when employed for the purposes of the institution, with or without maintenance, if provision for maintenance and medical attendance during sickness is made.

Casual employees not employed for the purpose of the employer's trade or business.

Members of the family of the employer who are not paid money wages.

The commission may exempt home-workers, who, owing to the irregularity of their work or other circumstances connected with their work cannot for administrative reasons be included in the system.

Voluntary Insurance.—SECTION 5. Self-employed persons whose earnings do not exceed one hundred dollars a month on an average; persons formerly compulsorily insured who, within one year from the date on which they cease to be insured, apply for voluntary insurance; members of the family of the employer who work in his establishment without wages, may insure themselves voluntarily in the local health or local trade health associations of the locality in which they live and of the trade at which they are employed, subject to the conditions of this act.

PART II.

Cases in which Benefits paid.—SECTION 1. Benefits shall be paid for any sickness or accident or death not covered by workmen's compensation.

Minimum Benefits.—SECTION 2. Every carrier must provide for its insured members as minimum benefits:—

Medical, surgical and nursing attendance.

Medicines and surgical supplies.

Cash benefits.

Funeral benefits.

Medical, Surgical and Nursing Attendance.—SECTION 3. All necessary medical, surgical and nursing attendance and treatment shall be furnished by the carrier from the first day of sickness during the continuance of sickness but not to exceed twenty-six weeks of disability in any consecutive twelve months. This shall include medical, surgical and obstetrical aid to insured women during confinement. In case the carrier is unable to furnish the benefit provided for in this section, it must pay the cost of such service actually rendered by competent persons at a rate approved by the commission.

Medical Service.—SECTION 4. The carriers, subject to the approval of the commission, shall make organized provision for medical, surgical and nursing aid by duly qualified physicians, surgeons and nurses or through institutions or associations of physicians, surgeons and nurses, as required by this act.

Medical and Surgical Supplies.—SECTION 5. Insured persons shall be supplied with all necessary medicines, surgical supplies, dressings, eyeglasses, trusses, crutches and similar appliances prescribed by the physician or surgeon, not to exceed fifty dollars in cost in any one year.

Hospital Treatment.—SECTION 6. Hospital or sanatorium treatment and maintenance may be furnished instead of all other benefits (except as provided in section eight), with the consent of the insured member, or that of his family when it is not practicable to obtain his consent. The carrier may demand that such treatment and maintenance be accepted when required by the contagious nature of the disease, or when in the opinion of its medical officer such hospital treatment is imperative for the proper treatment of the disease or for the proper control of the patient. Cash benefit other than to dependents may be discontinued during refusal to submit to hospital treatment. Hospital treatment shall be furnished for the same period as cash benefit. This benefit may be provided in those hospitals with which the associations and societies have made satisfactory financial arrangements which have met the approval of the commission, or in hospitals erected and maintained by the associations and societies with the approval of the commission.

Cash Benefit.—SECTION 7. A cash benefit shall be paid beginning with the fourth day of disability on account of any illness, except for disability due to childbearing; it shall equal two thirds (sixty-six and two thirds per cent) of the weekly wages of the insured member. It shall be paid only during continuance of disability, and shall not be paid to the same person for a period of over twenty-six weeks in any consecutive twelve months.

Cash Benefit to Dependents.—SECTION 8. A cash benefit equal to one third of the wages of an insured member receiving hospital treatment and entitled to cash benefit, shall be paid to his wife, dependent husband or children while he is in the hospital.

Computation of Benefits.—SECTION 9. For the purpose of computing the cash benefit, weekly wages shall be taken as the earnings during the last six days on which the employee worked full time preceding disability, not including earnings for overtime, unless such overtime is a regular occurrence in the employment; but if this computation would be unfair to the employee, his weekly wages shall be taken as six times his average daily earnings for the days

actually employed at full time during the three months preceding disability. If any association has established wage classes for any of its insured members, the wages fixed for each class shall be taken as the earnings of all members of the class.

Periods of Payment.—SECTION 10. Cash benefit shall be paid weekly where possible, and in no case less frequently than semimonthly.

Funeral Benefit.—SECTION 11. The carrier shall pay for the actual expenses of the funeral of a deceased insured member, as arranged for by the family or next of kin, or in absence of such by the officers of the fund, up to the amount of fifty dollars. The funeral benefit shall be paid in case of death of a former member while in receipt of sick benefits, or death within six months after discontinuance of sick benefits provided he has not, within those six months, returned to work.

Benefits from Other Sources.—SECTION 12. If the insured member be entitled to benefits during sickness from other sources, his cash benefit under this act shall be so reduced that his cash benefits from all sources shall not exceed ninety per cent of his earnings, and the carrier may refuse to pay cash benefit until the insured member has disclosed the amount of cash benefit to which he is entitled from other sources.

Payment of Damages from Other Sources.—SECTION 13. In case the insured member, his heirs or assigns are paid damages from another source on account of sickness, accident or death, the carrier shall be entitled to be reimbursed, by the person to whom damages are paid, for the reasonable cost of all benefits given the insured on account of such sickness, accident or death.

Suspension of Benefits.—SECTION 14. (1) While the insured person is serving a term in prison or in jail pending trial, (2) while the insured person is in an insane asylum, home for the feeble-minded, or a public institution for invalid or defective persons, he shall not be entitled to benefits.

Assignments and Exemptions.—SECTION 15. Claims for benefits under this act shall not be assigned, released or commuted, and shall be exempt from all claims of creditors and from levy, execution and attachment or other remedy for recovery or collection of a debt, which exemption may not be waived. Benefits shall be paid only to the person entitled or on his order.

Additional Benefits.—SECTION 16. The carriers may grant the following additional or increased benefits if the commission be satisfied that the income of the carrier is sufficient for the purpose:—

- a. Medical, surgical and nursing care and medical and surgical supplies to members of the family of the insured.
- b. A cash maternity benefit to insured women.
- c. Extension of cash benefit to exceed twenty-six weeks but not to exceed fifty-two weeks.
- d. Funeral benefits for members of the family.
- e. Increased amount allowed for medical and surgical supplies and appliances.
- f. Increase in the period of extended right to benefit.
- g. Dental work in addition to extraction, treatment and ordinary fillings, either up to a certain amount per year or by contribution of part of the cost.

Extension of Right to Benefit.—SECTION 17. When contributions cease on account of unemployment not due to sickness, right to benefit shall be extended one week if the insured person has paid contributions during six weeks immediately preceding unemployment, and an additional week for each additional six weeks of paid up membership during the preceding twenty-six weeks.

PART III.

APPORTIONMENT OF CONTRIBUTIONS.—SECTION 1. The full cost of insurance provided by this act, including

contributions to reserve and guarantee funds, shall be borne by employers, employees and the commonwealth in the following proportions: employers, two fifths; employees, two fifths, and the commonwealth one fifth, except as provided in section two.

Contributions of Low Paid Workers.—SECTION 2. If the earnings of the insured are less than nine dollars a week, the shares of the employer and employee of the amount paid by them jointly shall be in the proportion indicated as follows:

If earnings are under \$9, but not under \$8, employer, 60%; employees, 40%.

If earnings are under \$8, but not under \$7, employer, 70%; employees, 30%.

If earnings are under \$7, but not under \$6, employer, 80%; employees, 20%.

If earnings are under \$6, but not under \$5, employer, 90%; employees, 10%.

If earnings are under \$5, employer, 100%.

The contribution of the commonwealth shall remain one fifth of the total.

Amount of Contributions.—SECTION 3. The amount of the contributions shall be computed so as to be sufficient for the payment of benefits and the expenses of administration of the association and necessary reserves and guarantee funds.

Payment of Contribution.—SECTION 4. Every employer must pay to any local health or local trade health association on the date on which he pays his men, or at least monthly, the total contributions due from him and from his employees to such association. He may deduct from the wages paid any employee the share of that employee in the contribution, which shall be in proportion to his wages, but must inform him, in a method to be approved by the commission, of the amount so deducted. Approved societies shall provide by regulation, to be approved by the commission, for the payment of contributions by their members.

Calculation of Payments.—SECTION 5. Payment required from the employer by the preceding section shall be based upon his total expenditures for wages and salaries of employees covered by section three of Part I, of this act during the period for which payment is made.

Rates of Contributions.—SECTION 6. In associations in which employees in several industries are insured, payments required from employers of such employees may be fixed at different amounts for different industries, according to the degree of sickness hazard in those industries.

Establishments with Excessive Rate of Sickness.—SECTION 7. An association shall have the right, subject to the approval of the commission, to increase the rate of contribution of any employer whose establishment shows an excessive rate of sickness, such additional contribution to be payable by the employer without right of deduction from the wages of the employee.

PART IV.

Division of the Commonwealth into Districts.—SECTION 1. The commission shall, within six months after this act goes into effect, divide the commonwealth into districts, no one of which shall contain less than five thousand persons subject to compulsory insurance.

Establishment of Associations.—SECTION 2. Commission shall, before Sept. 1, 1917, hold one or more hearings in each district, notice of which shall be given by advertisement in at least one newspaper published in the district, and by any other method approved by the commission, and shall thereafter determine whether one or more local health associations and one or more trade health associations shall be established in the district. The commission shall then provide in each district for the election of delegates, half of whom shall be elected by employers, half by employees affected, to conventions which

shall have power to adopt constitutions. The expense of the elections and conventions shall be paid by the commonwealth, as expenses of the commission are paid.

Consolidation or Division of District.—SECTION 3. The commission at any time, on its own motion or on the petition of the board of directors of any local health or local trade health association, may consolidate two or more districts or detach a territory from one district and annex it to another, or create a new district from parts of several districts or from one district, already in existence, and shall make such disposition of the property of the dissolved association as shall seem to be proper.

Establishment of Local Trade Health Associations.—SECTION 4. Employers whose principal places of business are within the same district and employing two hundred and fifty employees in the same trade, or two hundred and fifty employees employed in the same trade by employers whose principal places of business are within the same district, may petition the commission for the formation of a local trade health association, and the commission, after a hearing within the district, which shall be duly advertised and notice of which shall be sent to the boards of directors of the local health and local trade health associations within the district, may authorize the formation of a local trade health association if there be no other local trade health association within the district for the trade, and if the establishment of the new local trade health association will not impair the solvency of the local health association or of any local trade health association in the district.

Authorization by Commission.—SECTION 5. No association shall begin business until it is authorized by the commission. The commission shall authorize an association only after approval and filing of its constitution and after the names and addresses of the board of directors elected for the first year have been filed with the commission.

Powers of Associations.—SECTION 6. Associations shall be corporations and shall have all the power necessary to carry out their duties under this act, including the power to verify by audit pay rolls of employer members for the purpose of determining contributions for which employer members are liable.

Constitution of Associations.—SECTION 7. Subject to the provisions of this act, the constitution of an association shall contain:—

Name of the association and location of its principal office.

If the association is a local trade health association, designation of the trade or trades for which it is created.

Maximum percentages, in each occupation, of total expenditures for wages and salaries as provided in section four of Part III of this act, at which the regular contribution may be fixed; a maximum which shall not exceed three per cent of the total, except with the approval of the commission, and shall in no case exceed five per cent of the total.

Nature and amount of benefits and length of time during which they shall be given.

Manner of election, number, powers, duties and time of meeting of all committees.

Number, powers, duties and time of meeting of the board of directors.

Method of amendment of constitution, and such other provisions as may be directed by the commission.

Committee of the Association.—SECTION 8. There shall be a committee of each association, which shall consist of not less than twenty and not more than two hundred members, to be elected in the manner provided in the constitution, one half by and from the employer members of the fund, one half by and from the employee members. The committee shall cause an audit of the accounts of the association to be made each year, and shall pass upon the same and

upon the annual report and budget of the board of directors.

Employers' Votes.—SECTION 9. Each employer member shall have as many votes for employer members of the committee as he employs workmen subject to the insurance and members of the association, except that no one employer shall have more than forty per cent. of the total vote, unless otherwise provided in the constitution.

Board of Directors.—SECTION 10. The board of directors shall be elected by the committee for a period of one year. All directors must be citizens of the United States, and a majority of them must be residents of this commonwealth. The board shall consist of not less than eight and not more than eighteen directors, one half of whom shall be elected by employer members of the committee, and one half elected by employee members of the committee. No one shall be a member of the committee and a director at the same time. The compensation of members of the board shall not be more than five dollars a day for each day spent upon the business of the fund. The directors shall be reimbursed for any necessary expenses incurred by them as such directors.

Powers of the Board.—SECTION 11. The board shall—

Fill vacancies in its own number for unexpired terms; *provided*, that only employers' representatives shall vote for employer directors, only employees' representatives for employee directors.

Appoint all officers and employees of the board and fix their salaries, and may delegate to officers or employees the power of appointing subordinate employees and of fixing their salaries.

Elect a president and secretary from their own number.

Make regulations necessary for carrying out the purposes of the association.

Make contracts with physicians, hospitals, pharmacists and any other persons necessary for the business of the association.

Prepare and submit to the committee annually a financial account and a report for the past year and a budget for the ensuing year.

Represent the association and direct and administer its affairs, except as otherwise specified in this chapter.

Officers' Bonds.—SECTION 12. All executive and judicial officers of the associations shall be bonded for amounts to be determined by the board of directors, with the approval of the commission.

RESERVE.—SECTION 13. Every association shall accumulate a reserve fund. The board of directors shall transfer to such fund one twentieth of the annual income of the association until such fund is equal to one sixth of the total expenditures for the preceding three years. The fund shall be maintained at this level. Any surplus which may accrue from the investment of such fund may be transferred into the general account of the association.

Membership in Association.—SECTION 14. Every person subject to insurance shall be an insured member of the local trade health association of the trade at which and in the district in which he is employed; or if there be no such association, of a local health association of such district; *provided*, that while he is a member of an approved society he shall be excluded by the board of directors from membership in an association. The commission shall provide by regulation for the case of persons regularly occupied at one trade, but temporarily employed at another. Membership in local health or local trade health associations shall cease as soon as the insured becomes a member of another local health or local trade health association. Any employer shall be an employer member of all associations of which any of his employees are members.

Voluntary Insurance.—SECTION 15. A person entitled to voluntary insurance must be admitted on application to membership in the local trade health association of his trade in the district in which he is employed, or if there be no such association, then in a local health association of such district: provided, that any association may prohibit by regulation the admission to voluntary insurance of a person who has not passed a satisfactory medical examination by its medical officers, and that the application for admission be subject to the same condition as an application for insurance. The contribution of the voluntary member shall be equal to the contribution required of the employer and employee for a compulsory member of the same trade and earnings.

Loss of Voluntary Membership.—SECTION 16. A person voluntarily insured shall lose his membership if he acquire membership, either voluntary or compulsory, in another association or society, or if he be in arrears for one month in the payment of his contributions, unless this period is extended by the association.

Fines and Penalties.—SECTION 17. Associations may fine their employer and insured members and suspend insured members from benefit for violation of their rules or regulations or for fraudulent representations made with the intent of securing or aiding another to secure benefits, in accordance with rules approved by the commission providing for and limiting such fines or suspensions. If an employer fails or refuses to pay any contribution due to the carrier under this act, the carrier to whom the contribution is due may recover the whole sum with interest at six per cent by suit in a court of competent jurisdiction, and the employer shall not be entitled to deduct any part of such sum from the wages of his employee or employees.

Approved Societies.—SECTION 18. A labor union, benevolent or fraternal society, or an establishment society, shall be approved by the commission only after hearing the local health or local trade health associations affected and only if:—

It is not carried on for profit, but reasonable salaries paid officials shall not be considered profit.

It is under the absolute control of the insured members in so far as the insurance regulated by this law is affected, except that the employer may appoint one half of the governing body of an establishment society.

It shall satisfy the commission that it is in a sound financial condition.

It grants at least the minimum benefits provided in this act.

It has a membership of at least five hundred persons insured for at least the minimum benefits provided under this act or their equivalent, except that in the case of establishment societies in which the employer satisfactorily guarantees the payment of benefits, the number of members may be fixed by the commission.

Its operation will not, in the opinion of the commission, endanger the existence of any local health or local trade health association.

In case of an establishment society, a majority of the employees subject to insurance request approval, and the employer's contribution be at least equal to that of all the employees.

The approval of the commission may be withdrawn at any time upon its finding, after hearing the society affected, that any of the required conditions are no longer satisfied. The commission may, after a hearing, permit an establishment society to accept, on conditions satisfactory to the commission, as members, all persons subject to insurance in its district.

Employers' Contributions.—SECTION 19. The commission shall assess upon every employer, any of whose employees are insured in labor union, benevolent or fraternal societies, a sum equivalent to the employer's contributions had such employees been

members of associations. This sum shall be paid in monthly installments into the guarantee fund established by the commission.

Contributions of the Commonwealth.—SECTION 20. The commonwealth shall contribute to every approved society one fifth of its total expense for health insurance under this act, subject to the provisions of section nine of Part V of this act.

Organization of Wage Groups Permitted.—SECTION 21. An insurance carrier may, with the approval of the commission, divide the members entitled to benefits into wage groups for the purpose of administering cash benefits.

Power to Fix Wages.—SECTION 22. Any carrier may fix the average wages or may fix the average gratuities received in any employment or branch thereof, and on the approval of the commission, such amounts shall be conclusive on all its members, except that the average wages shall not apply to section four of Part III of this act.

Health Insurance Union.—SECTION 23. Two or more health insurance carriers may combine for the administration of the medical benefit, subject to the approval of the commission. The commission may, after notice to and hearing of the parties in interest, withdraw its approval and dissolve the union, making such disposition of its property as may seem to it in the best interests of the insured.

PART V. COMMISSION.

State Social Insurance Commission.—SECTION 1. A state social insurance commission is hereby created, consisting of three commissioners, to be appointed by the governor, one of whom shall be designated by the governor as chairman. The term of office of members of the commission shall be six years, except that the first members thereof shall be appointed for such terms that the term of one member shall expire on January 1, 1918; one on January 1, 1920; and one on January 1, 1922. Each commissioner shall devote his entire time to the duties of his office, and shall not hold any position of trust or profit, or engage in any occupation or business interfering or inconsistent with his duties as such commissioner, or serve on or under any committee of a political party. The commission shall have an official seal, which shall be judicially noticed.

Secretary.—SECTION 2. The commission shall appoint and may remove a secretary, at an annual salary of three thousand six hundred dollars. The secretary shall perform such duties in connection with the meetings of the commission, and its investigations, hearings and the preparation of rules and regulations under the provisions of this act, as the commission may prescribe.

Officers and Employees.—SECTION 3. The commission may appoint such officers, other assistants and employees as may be necessary for the exercise of its power and the performance of its duties under the provisions of this act, all of whom shall be in the competitive class of the classified civil service; and the commission shall prescribe their duties and fix their salaries, which shall not exceed in the aggregate the amount annually appropriated by the legislature for that purpose.

Salaries and Expenses.—SECTION 4. The chairman of the commission shall receive an annual salary of \$4500, and each other commissioner an annual salary of \$4000. The commissioners and their subordinates shall be entitled to their actual and necessary expenses while traveling on the business of the commission. The salaries and compensation of the subordinates, and all other expenses of the commission shall be paid out of the state treasury upon vouchers signed by the chairman or one of the commissioners designated by him for that purpose.

Offices.—SECTION 5. The commission shall have its main office in the capitol of the commonwealth, and

may establish and maintain branch offices in other cities of the commonwealth as it may deem advisable. Branch offices shall, subject to the supervision and direction of the commission, be in immediate charge of such officials or employees as it shall designate.

Powers of Individual Commissioners.—SECTION 6. Any investigation, inquiry or hearing which the commission is authorized to hold or undertake may be held or undertaken by or before any commissioner, and the award, decision or order of a commissioner, when approved and confirmed by the commission and ordered filed in its office, shall be deemed to be the award, decision, or order of the commission. Each commissioner shall, for the purpose of this act, have power to administer oaths, certify to official acts, take depositions, issue subpoenas, and compel the attendance of witnesses and the production of books, accounts, papers, records, documents and testimony.

Powers of Commission.—SECTION 7. The commission may adopt all reasonable rules and regulations, and do all things necessary to put into effect the provisions of this act.

Payment of Commonwealth Contributions.—SECTION 9.—The commission shall estimate the commonwealth contribution annually before the first day of January of each year and shall, before that date, apportion it among the carriers in proportion to their estimated expenditures for the purposes of the act during the year, and shall notify the commonwealth treasurer of the sum to be paid on March 31, June 30, September 30, and December 31 of the current year to each carrier. The treasurer shall pay the amount out of the unexpended balance of any appropriation in his hands for the purpose.

Guarantee Fund.—SECTION 9. The commission shall reserve ten per cent of the contributions of the commonwealth to the carriers and pay it into a fund to be known as the guarantee fund, from which it may contribute for the relief of any carrier, on the application of its board of directors after investigation by the commission. A contribution shall be made only where, in the judgment of the commission, the necessity arises from epidemic, catastrophe or other unusual conditions, and shall never be made where, in the opinion of the commission, the deficit is due to failure or refusal of the directors to levy proper rates of contributions. When, and so long as, in the opinion of the commission the guarantee fund is sufficient, the commission shall make no reservation for this purpose.

Commonwealth Treasurer Custodian of Fund.—SECTION 10. The commonwealth treasurer shall be the custodian of the commonwealth guarantee fund, and all disbursements therefrom shall be paid by him upon vouchers authorized by the commission and signed by the chairman or another member designated by him in writing. The commonwealth treasurer shall give a separate and additional bond in an amount to be fixed by the governor and with securities approved by the commonwealth comptroller conditioned for the faithful performance of his duty as custodian of the guarantee fund. The commonwealth treasurer may deposit any portion of the fund not needed for immediate use, in the manner and subject to all the provisions of law respecting the deposit of other commonwealth funds by him. Interest earned by such portion of the guarantee fund deposited by the commonwealth treasurer shall be collected by him and placed to the credit of the fund.

Report of Commission.—SECTION 11. Annually, on or before the first day of February, the commission shall make a report to the governor, which he shall lay before the legislature, which shall include a statement of the apportionment, the commonwealth contribution, statistics of sickness experience under this act, a detailed statement of the expenses of the commission, the condition of the commonwealth guarantee fund, together with any other matter which the

commission deems proper to report, including any recommendations it may desire to make.

Social Insurance Council.—SECTION 12. The social insurance council shall consist of twelve members, six of whom shall be elected by employer directors and six by employee directors of the local health and local trade health associations; their term of office shall be two years, except that in the first election three of the employer and three of the employee members of the council shall be elected for one year; they shall receive a compensation of five dollars a day for each day spent on the business of the council, and shall be reimbursed for reasonable expenses incurred in connection with such business, to be paid as other expenses of the commission are paid.

Officers of Council.—SECTION 13. The council shall elect a president from its own number; the secretary of the commission shall act as the secretary of the council.

Meetings of Council.—SECTION 14. The council shall meet during the first week of January, of April, of July, of September, each year. Special meetings shall be called by the president on the request of at least five members of the council or of two members of the commission, at any time.

Duties of Council.—SECTION 15. The annual report and recommendations of the commission shall be laid before the January meeting of the council before transmission to the governor, and the council may approve them or make a separate report and recommendations to the governor. All general regulations proposed by the commission shall be laid before the council at a regular or special meeting for discussion before final adoption, except in cases of urgency, to be determined by the commission, and in this case the regulation shall be laid before the next regular meeting of the council or a special meeting called for the purpose.

Settlement of Disputes.—SECTION 16. All disputes arising under the act shall be determined by the social insurance commission either on appeal from the proper authority or from the carrier, or, in case of disputes between carriers, by original proceedings. The commission may assign any dispute for hearing and determination to a dispute committee, composed of one employer and one employee member of the council, and a member of the commission, as chairman, the members of the council to serve in turn on the dispute committee for periods of one month; either party may appeal from the decision of the dispute committee to the commission within thirty days from the date of rendering the decision.

Suits at Law.—SECTION 17. Suits shall not be brought in any court on any matter on which an appeal is allowed to the commission until after a decision by the commission, or of a dispute committee, and the statutes of limitations shall not begin to run in such cases until after decision of the commission or dispute committee is filed.

PART VI.

MISCELLANEOUS PROVISIONS.

Limitation of Claims.—SECTION 1. No claim for benefit shall be valid unless made to the board of directors of the proper carrier within one year from the time when the benefit was due.

Limitation of Claims for Contributions.—SECTION 2. No claim of a carrier for contribution shall be valid unless suit is brought thereon in the proper court within one year from the time when it was due.

Disclosure Prohibited.—SECTION 3. Information acquired by the commission or any association, or any of their officers or employees, from employers or employees pursuant to this chapter shall not be opened to public inspection, and any officer or employee of the commission who, without authority of the commission or pursuant to its rules, or as other-

wise required by law, shall disclose the same, shall be guilty of a misdemeanor.

Technical Rules of Evidence or Procedure Not Required.—SECTION 4. The commission or a commissioner or deputy commissioner or appeal committee in making an investigation or inquiry or conducting a hearing shall not be bound by common law or statutory rules of evidence or by technical or formal rules of procedure, except as provided by this chapter; but may make such investigation or inquiry or conduct such hearing in such manner as to ascertain the substantial rights of the parties.

When to Take Effect.—SECTION 5. This chapter shall take effect immediately, except that the provisions as to the payment of contributions shall not take effect until January 1, 1917, and the first payment of contributions by the state shall not be made until March 31, 1917; the provisions as to the medical, surgical and nursing benefit and the medicine and supply benefit shall not take effect until April 1, 1917, and the provisions as to the other benefits shall not take effect until July 1, 1917; provided, that if a carrier is authorized after January 1, 1917, the provision as to the medical, surgical and nursing and the medicine and supply benefits shall not take effect until three months, and the provisions as to other benefits shall not take effect until six months, after authorization.

Tax Exemption.—SECTION 6. The property of the association shall be free from taxation for all purposes.

NOTICE.

BOSTON CITY HOSPITAL.—Until further notice, Saturday will be the public operating day at the Boston City Hospital. Operations will commence at 10 a.m., and will be performed by members of the surgical staff on active duty. Operative clinics of individual services will be continued on days to be announced later. In future the operating day of the second surgical service will be on Friday, instead of on Saturday, as in the past. Drs. Lund, Hubbard and Cunningham will operate at 10 a.m.

SOCIETY NOTICE.

THE MASSACHUSETTS THERAPEUTIC MASSAGE ASSOCIATION.—The next meeting will be held at the Hotel Brunswick, at 7.45 p.m., Thursday, December 14, 1916. Dr. Frank C. Richardson, professor of diseases of the Nervous System, Boston University Medical School, will address the Society on "Dysglandular Syndromes—Conditions of Ill Health from Disturbances of Glands of Internal Secretions."

Members of the medical profession invited.
Please be prompt and thus show your appreciation.

DOUGLAS GRAHAM, M.D., *President*,
MRS. MABEL F. WALKER, *Secretary*.

APPOINTMENTS.

UNIVERSITY OF GHEENT.—Dr. J. Versluis, who, since 1907, has been professor of zoology and comparative anatomy at the University of Glessen, has been appointed to the same chair in the new Flemish University of Ghent.

UNIVERSITY OF NEBRASKA.—Dr. H. E. Eggers has been appointed professor of pathology and bacteriology; Dr. Amos W. Peters, assistant professor of bacteriology; and Dr. John P. Myers, instructor in bacteriology at the Medical School of the University of Nebraska, Omaha.

RECENT DEATHS.

DR. JOHN A. MCCORKLE, who died recently at Brooklyn, N. Y., was born at Lordstown, Ohio, in 1847. He received the degree of M.D. in 1873 from the University of Michigan, and later studied at the Long Island College Hospital Medical School. In 1875 he was appointed chemist to the Brooklyn Board of Health. In 1880 he was appointed professor of materia medica at the Long Island College Hospital Medical School, where, in 1886, he became professor of the theory and practice of medicine and of clinical medicine, and in 1904, president of the institution. His specialty was in diseases of the heart and lungs, and he was the author of several books and many papers on these subjects. He was for many years consulting physician of the King's County Hospital, the Norwegian Hospital, the Jewish Hospital, and the St. John's Hospital. He was a member of the American Medical Association, the New York Academy of Medicine, the King's County Medical Society, the Associated Physicians of Long Island, the Brooklyn Pathological Society, and the Brooklyn Society of Internal Medicine. He was not married.

DR. LOUISE C. PURINGTON, who died recently at Dorchester, Mass., was born in Madison, N. Y., on July 3, 1845. She received the degree of M.D. from the Hahnemann Medical College in Chicago in 1874, and had practised her profession in Massachusetts since that time.

DR. WILLIAM MANLY SULLIVAN, who died recently at North Adams, Mass., was a native of that city. He graduated from the dental school of the University of Pennsylvania in 1904, and began the practice of his profession in North Adams. In 1915 he was appointed a member of the Massachusetts State Board of Registration in Dentistry. He was a member of the Massachusetts and Berkshire Dental Societies and of the North Berkshire Medical Society. He is survived by his widow and two children.

DR. LOUIS McLAIN TIFFANY, who died of cardiac disease on October 23, in Mount Custis, Accomac County, Virginia, was born in 1844. He obtained his academic education at the University of Cambridge, England, and received his medical degree from the University of Maryland. He was for many years professor, and finally emeritus professor, of medicine at the University of Maryland and surgeon and consulting surgeon for the Johns Hopkins Hospital, Baltimore.

DR. HARRY ALBERT TUTTLE, who died on October 30, at Derry, N. H., was born in Boston in 1875. He graduated from the Harvard Veterinary School in 1898, and since that time had practised his profession in and about Boston. He is survived by his widow.

DR. WILLIAM UNDERWOOD TUTTLE, brother of Dr. Harry Tuttle, died on November 10 of pneumonia, at Jamaica Plain, Mass. He was born at Hyde Park, Mass., in 1878, and graduated from the Harvard Veterinary School in 1901. He was not married.

DR. JULIUS H. EICHBERG, who died on October 31, 1916, was for many years professor of materia medica in the College of Medicine of the University of Cincinnati.

DR. JAMES O. GREEN, who died on November 24, at Long Branch, N. J., was born in 1839. He received the degree of A.B. from Princeton University in 1861, and that of M.D. from Bellevue Medical College in New York in 1864. He had practised surgery for his entire professional career in New Jersey. He is survived by his widow and three daughters.